

**A.G.&S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
VUYYURU-521165, KRISHNA Dt., A.P.**

**An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam**  
Accredited by NAAC with “A” Grade                      ISO9001-2015 Certified Institution

**2021-2022**

**B.SC.AQUACULTURE**

**ODD SEMESTER**



**DEPARTMENT OF ZOOLOGY**

**MINUTES OF BOARD OF STUDIES**

**B.SC.AQUACULTURE**

**01-11-2021**

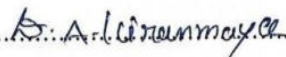
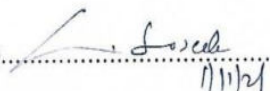


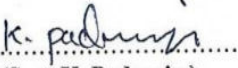
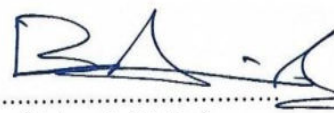
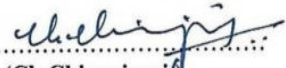


Minutes of the meeting of Board of studies in Zoology for the Autonomous courses of AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru, held at 2:30 pm on 01-11-2021 in the Department of Zoology.

Smt.D.A. Kiranmayee. ...

Presiding

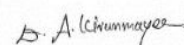
Members Present:

- 1)  Chair person Head, Department of Zoology,  
(Smt. D.A.Kiranmayee.) A.G&S.G.S Degree College of  
Vuyyuru-521165.
- 2)  University Nominee Bio Sciences & Bio technology  
(Smt. Dr.L.Suseela.) Krishna University  
Machilipatnam.
- 3)  Academic Council Head,Department of Zoology,  
(Sri Dr.M.Viyay kumar.) Nominee SRR & CVR Govt. Degree College,  
Vijayawada.
- 4)  Academic Council Head, Department of Zoology,  
(Sri Ch. Venkateswaralu.) Nomine P.B. Siddhartha College,  
Vijayawada.
- 5)  Member Lecturer in Zoology,  
(Smt. K. Padmaja.) A.G&S.G.S Degree College  
Vuyyuru-521165.
- 6)  Industrialist Asst. Project Manager,  
(B. Appala Naidu.) RGCA  
Manikonda.
- 7)  Student Represent P.hd –Research Scholar,  
(Ch.Chiranjeevi) Dept.of Botany & Microbiology,  
Acharya Nagarjuna University,  
Guntur.

## AQUACULTURE

### Agenda for B.O.S Meeting.

1. To recommend the syllabi (Theory & Practical), Model question paper for I Semester of I B.Sc (A.B.C) for the academic year 2021-2022.
2. To recommend the syllabi (Theory & Practical), Model question paper for III Semester of II B.Sc (A.B.C) for the academic year 2021-2022.
3. To recommend the syllabi (Theory & Practical), Model question paper for V Semester of III B.Sc (A.B.C) for the academic year 2021-2022.
4. To recommend the syllabi (Theory & Practical), Model question paper and Blue print of I, III & V semester of I, II, III B.Sc (A.B.C.) for the academic year 2021-2022.
5. To recommend the teaching and evaluation methods to be followed under Autonomous statues.
6. Any other matter.



Chairman.

## RESOLUTIONS

1. It is resolved to implement the changed syllabi (Theory & Practical), model question paper of I Semester of I B.Sc. (A.B.C) under Choice Based Credit System (CBCS) for the academic Year 2021 – 2022.
2. It is resolved to implement the changed syllabi (Theory & Practical), model question paper of III Semester of II B.Sc. (A.B.C) under Choice Based Credit System (CBCS) for the academic Year 2021 – 2022.
3. It is resolved to follow the newly framed syllabi (Theory & Practical), model question paper of Semester of III B.Sc. (A.B.C) under Choice Based Credit System (CBCS) for the academic Year 2021 – 2022.
4. It is resolved to follow the Model question paper and Blue print of I,III& V semester of I,II& III B.Sc (A.B.C.) for the academic year 2021-2022.
5. It is resolved to introduce Value Added Course in Sericulture to I B.Sc. Aqua Students
6. It is resolved to continue the following teaching & evaluation methods for the Academic year 2021-22.

### **Teaching methods:**

Besides the conventional methods of teaching, we use modern technology i.e. Using of OHP and LCD projector to display on U boards etc; for better understanding of concepts.

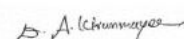
### **Evaluation of a student is done by the following procedure:**

#### **❖ Internal Assessment Examination:**

- ❖ Out of maximum 100 marks in each paper for II & III B.Sc(A.B.C) 30 marks shall be allocated for internal assessment.
- ❖ Out of these 30 marks, 20 marks are allocated for announced tests (i.e . IA-1& IA-2). Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks are allocated on the basis of candidate's percentage of attendance and remaining 5 marks are allocated for the assignment for I,II& III B.Sc ( A.B.C).
- ❖ Out of maximum 100 marks in each paper for I B.Sc(A.B.C) 25 marks shall be allocated for internal assessment.
- ❖ Out of these 25 marks, 20 marks are allocated for announced tests (i.e . IA-1& IA-2). Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks are allocated on the basis of candidate's percentage of attendance / assignment for I, semester.
- ❖ There is no pass minimum for internal assessment for I, II, III B.Sc

#### **❖ Semester – End Examination:**

- ❖ The maximum mark for I (ABC) semester – End examination shall be 75 marks and duration of the examination shall be 3 hours.
- ❖ The maximum mark for III, V (A.B.C) semester – End examination shall be 70 marks and duration of the examination shall be 3 hours. Even though the candidate is absent for two IA exams/ obtain Zero marks the external marks are considered (if the candidate gets 40/70) and the result shall be declared as “PASS”.
- ❖ Semester – End examination shall be conducted in theory papers at the end of every semester, while in practical papers, these examinations are conducted at the end of I, III & V semester for I, II & III B.Sc, (A.B.C).



**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE  
COLLEGE OF ARTS & SCIENCE, VUYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

**ALLOCATION OF CREDITS**

**Structure of AQUACULTURE Syllabus**

**For the Papers offered during I,III & V Semesters**

<i>Year</i>	<i>Semester</i>	<i>Title</i>	<i>Teaching hours</i>	<i>Internal marks</i>	<i>External marks</i>	<i>Credits</i>
I	I	Basic Principles of Aquaculture	4	25	75	03
		Practical - I	2	10	40	01
II	III	Fresh water & Brackish water Aquaculture	4	30	70	03
		Practical -III	2	25	25	01
III	V( 501)	Fish health Management	4	30	70	03
		Practical - 501p	2	25	25	01
	V(502)	Extension, Economics & Marketing	4	30	70	03
		Practical - 502p	2	25	25	01
		Total Credits				16

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA  
DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU-521165, KRISHNA Dt., A.P.  
(AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Basic Principles of Aquaculture**

**Semester: - I**

Course Code	<b>AQUT11A</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	25
No. of Lecture Hours/Week	4	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2019-20	Year of Offering 2019-2020	Year of Revision – 2021-22	Percentage of Revision: 70%

**AIM**

- To know the basic principles of Aquaculture.

**OBJECTIVES**

- To study the concept of blue revolution and its impact at global, national and state level.
- To get acquainted with different culture systems and culture methods.
- To study the different types of ponds used in culture practices.
- To study the criteria for construction of ideal fish pond.
- To study the management practices in fish/ prawn culture.

**PREREQUISITE**

- Knowledge of fisheries management acquired in Intermediate.

**COURSE OUTCOMES**

**By the end of the course students will be able to**

<b>CO 1</b>	Understand the concept of blue revolution, analyse the history and compare the present status of aquaculture at global, national and state levels and its significance over agriculture and gain knowledge in the various aquaculture resources and advantages of culture over capture.
<b>CO 2</b>	Acquire knowledge in the different types of aquaculture, culture systems and culture methods in practice worldwide.
<b>CO 3</b>	Gain knowledge in the different types of culture ponds.
<b>CO 4</b>	Understand the arrangement of different types of ponds in a fish farm and design an ideal fish farm.
<b>CO 5</b>	Comprehend the best management practices to be adopted in aquaculture for good yield and acquire the skill in the analysis of water and soil parameters of a culture pond.
<b>CO 6</b>	Identify the different types of weeds and predators in a culture pond and suggest the suitable control measures for their eradication.

## Syllabus

Unit	Learning Units	Lecture Hours
I	<p><b>UNIT-I ( Introduction)</b>            Definition and History of Aquaculture            Concept of Blue Revolution and Pradhan Mantri Matsya Sampada Yojana (PMMSY)            Present status of Aquaculture at global level, India and Andhra Pradesh            Aquaculture versus Agriculture; Present day needs with special reference to Andhra Pradesh            Aquaculture resources: Ponds, tanks, lakes, reservoirs etc            Capture and Culture fisheries; Advantages of culture fishery over capture fishery</p>	11
II	<p><b>UNIT-II (Types of Fish Ponds)</b>            Lotic and lentic systems, streams and springs            Classification of ponds based on water resources – spring, rain water, flood water, well water and water course ponds            Functional classification of ponds – head pond, hatchery, nursery, rearing, production and stocking ponds; quarantine ponds, isolation ponds and wintering ponds; Hatchery design</p>	11
III	<p><b>UNIT- III (Design and Construction of Aqua Farms)</b>            Important factors in the construction of an ideal fish pond – site selection, topography, nature of the soil, water resources            Lay out and arrangement of ponds in a fish farm            Construction of an ideal fish pond – space allocation, structure and components of barrage Pond</p>	10
IV	<p><b>UNIT-IV (Aquaculture Systems and Practices )</b>            Types of aquaculture            Fresh water aquaculture , Brackish water aquaculture , Mariculture            Aquaculture Systems – Pond, Raceways, Cage, Pen, Rafts, Running water, Water Recirculating Systems, Biofloc Technology and 3-C System Pond culture practices- Traditional, Extensive, Modified Extensive, Semi-Intensive, Intensive &amp; Super-intensive systems of fish and shrimp and their significance.            Fin fish culture methods - Monoculture, Polyculture and Monosex culture and Integrated fish farming.</p>	12
V	<p><b>UNIT-IV (Management Factors of Culture Ponds)</b>  <b>Pre-stocking Management</b>            Dewatering, drying, ploughing/desilting            Liming and fertilization; Need of fertilizer and manure application, NPK contents of different fertilizers and manures and precautions in their Application            Predators, weeds and weed fish in culture ponds - Advantages and disadvantages of weed plants; Toxins used for weed control and control of predators. Algal blooms and their control  <b>Stocking Management</b> – Stocking density and stocking  <b>Post-stocking Management</b>            Feeding: Role of nutrients            Water quality: Physico-chemical conditions of soil and water optimum for culture            temperature, depth, turbidity, light, water and shore currents, PH, DOD, CO<sub>2</sub>, NH<sub>3</sub>, NO<sub>2</sub> and nutrients            . Measures to increase oxygen and reduce ammonia &amp; hydrogen sulphide in culture ponds; correction of PH</p>	14

**PRESCRIBED BOOK(S):**

1. Jhingran VG 1998. Fish and Fisheries of India. Hindusthan Publishing Corporation, New Delhi
2. Pillay TVR, 1996. Aquaculture Principles and Practices, Fishing News Books Ltd., London

**REFERENCES:**

1. Pillay TVR & M.A. Dill, 1979. Advances in Aquaculture. Fishing News Books Ltd., London
2. Stickney RR 1979. Principles of Warm Water Aquaculture. John Wiley & Sons Inc. 1981
3. Boyd CE 1982. Water Quality Management for Pond Fish Culture. Elsevier Scientific Publishing
4. Bose AN et al., 1991. Coastal Aquaculture Engineering. Oxford & IBH Publishing Company.

**CO-CURRICULAR ACTIVITIES**

1. Collection of data on present status of aquaculture
2. Animal album-making
  - a. Plankton
  - b. Aquatic weeds
  - c. Aquatic Insects
  - d. Algal Blooms
  - e. Weed and Predatory fish
3. Preparation of clay models of different ponds in a fish farm.
4. Field survey of nearby habitat for dietary dependency on and requirement of aqua-products
5. Collection of water and soil samples and estimation of various parameters.
6. Preparation of charts on aeration devices.
7. Collection of different culture species stage-wise {spawn, fry, fingerlings, zero size and adult (more than 200 g)}



*I SEMESTER END EXAMINATIONS*

**PAPER – I MODEL PAPER**  
**Title of the paper: Basic Principles of Aquaculture**

**Course Code: AQUT11A**

**Time: 3 Hours**

**Max. Marks: 75**

---

**SECTION –A**

Draw neat labeled diagrams wherever necessary.

Answer and FIVE of the following

5x5=25 Marks

1. Explain the significance of Biofloc Technology CO2, L2
2. Explain the concept of blue revolution CO1, L2
3. What is Mari culture?CO2, L1
4. Explain the importance of pond fertilization. CO5, L2
5. Explain the functional role of Rearing and Stocking ponds CO3, L2
6. Mention the criteria for site selection of an ideal fish pond CO4, L1
7. Analyze the control measures for weed fish in culture ponds CO6, L4
8. Justify the role of nutrients in a fish pond. CO5, L5

**SECTION – B**

**Answer the following questions.**

**5X10=50 Marks**

9. Define capture and culture fisheries. List out the advantages of culture fishery over capture fishery. CO1, L1

OR

Mention the present status of Aquaculture at global level, India and Andhra Pradesh.CO1, L1

10. Explain the different types of freshwater aquaculture. CO2, L2

OR

Describe the different types of pond culture methods. CO2, L2

11. Give an account of the different types of hatcheries and describe the design of a modern hatchery. CO4, L2

OR

Classify ponds based on water resources. CO4, L2

12. Describe the structure and components of a barrage pond. CO4, L1

OR

Describe the lay out and arrangement of nursery pond in a fish farm. CO4, L1

13. Analyze the physico-chemical conditions of water optimum for fish culture. CO5, L4

OR

Write an essay on aquatic weed plants in a fish pond, their advantages and disadvantages. CO6, L4

**PRACTICAL- I (At the end of I Semester)**

**Title of the paper: Basic Principles of Aquaculture.**

**No of Hours: 30**

**Credits: 01**

**WEF: 2021-2022 Course Code: AQU P11A**

---

**LEARNING OUTCOMES:**

By the end of the course students will be able to

Identify the various live food organisms in the culture ponds.

Identify the aquatic weeds, insects and weed fish causing damage to the cultured animals and suggest measures to control the algal blooms in culture ponds.

Understand the mechanism of aeration devices used in culture ponds.

Develop skill in analysing the various water and soil parameters.

Gain practical knowledge in the management of different types of ponds in a fish farm.

Understand the importance of preservation of museum specimens and identify the animals based on special identifying characters.

Maintain a neat, labeled record of identified museum specimens and exhibit the hidden creative talent.

1. Estimation of Carbonates, Bicarbonates in water samples
2. Estimation of Chlorides in water samples
3. Estimation of Dissolved Oxygen
4. Estimation of Ammonia in water.
5. Estimation of Total Hardness of water sample.
6. Determination of soil Nitrogen and Phosphorus.
7. Study of beneficial and harmful algal species
8. Study of aeration devices
9. Collection, identification and isolation of zooplankton and phytoplankton
10. Collection and study of aquatic weeds, aquatic insects, weed fish and larvivorous fish
11. Study of fish species banned from culture (*Clarius gariepinus*,  
*Hypostomus plecostomus*)
12. Field visit to hatchery, nursery, rearing and stocking ponds of aqua farms.

**PRESCRIBED BOOK(S):**

1. Jhingran VG 1998. Fish and Fisheries of India, Hindustan Publishing Corporation, New Delhi
2. Pillay TVR, 1996. Aquaculture Principles and Practices, Fishing News Books Ltd., London

## REFERENCES

1. Boyd CE. 1979. *Water Quality in Warm Water Fish Ponds*. Auburn University
2. Boyd, CE. 1982. *Water Quality Management for Pond Fish Culture*. Elsevier Sci. Publ. Co.
3. FAO. 2007. *Manual on Freshwater Prawn Farming*.
4. ICAR. 2006. *Hand Book of Fisheries and Aquaculture*. ICAR.
5. Lovell RT.1998. *Nutrition and Feeding of fishes*.Chapman& Hall.
6. Mevey JP. 1983. *Handbook of Mariculture*. CRC Press.
7. MPEDA: *Handbooks on culture of carp, shrimp, etc.*
8. Bose AN et.al., 1991. *Costal Aquaculture Engineering*.Oxford & IBH Publishing CompanyPvt.Ltd.
- 9.Stickney RR 1979. *Principles of Warm Water Aquaculture*. John Wiley & Sons Inc.1981
10. Pillay TVR &M.A.Dill, 1979.*Advances in Aquaculture*. Fishing News Books Ltd., London

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

### **I B.Sc AQUACULTURE PRACTICAL EXAMINATION**

**Practical - I**

**Course Code: AQU P11A**

**Title of the paper:Basic Principles of Aquaculture**

**Time: 3hrs.**

**Max. Marks 40M**

I. Estimate the amount of Chlorides/ Dissolved Oxygen/Free Carbon dioxide /Total Hardness of the given sample. CO4, L5 **10 M**

Procedure: 5M

Calculations: 3M

Report: 2M

II. Identify, draw labelled diagram, classify and comment on CO1, CO2, CO6, L3 **5x3=15 M**

A. Algal Blooms

Identification : 1M

B. Plankton

Diagram :1/2 M

C. Aquatic weed

Notes : 11/2M

D. Aquatic Insect

E. Weed Fish

III. Practical Record Book CO7, L3 **5M**

IV. Field note Book CO5, L1 **5M**

V. VIVA CO7, L5 **5M**

\*\*\*\*\*

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA  
DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU-521165, KRISHNA Dt., A.P.  
(AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Fresh water & Brackish water Aquaculture**

**Semester: - III**

Course Code	<b>AQU-301C</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours/ Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-2022	Year of Offering 2021-2022	Year of Revision –	Percentage of Revision:

**Objective of the course:** The students understand Fresh water & Brackish water Aquaculture.

**Course outcomes:**

CO1: Learn the Status, Scope and Prospects of fresh water aquaculture in the world, India and AP.

CO2: Learn about Major Cultivable Indian Carps and Exotic fish Species introduced in India

CO3: Know about recent developments in the culture of clarius, anabas and murrels and special systems of aquaculture.

CO4: Gain knowledge of commercially valuable Fresh water prawns of India and their culturing methods.

CO5: Learn about culturing of brackish water Prawn Species *P.mondon* and *L.vannamei* and hatchery technology's involved

**Learning Objectives:**

- To know the present status of freshwater and brackish water aquaculture and their role in world economy and food production.
- To gain knowledge on carp, prawn, shrimp and crab culture and composite fish culture systems.
- To improve the technical knowledge on fish and shrimp hatchery technology and culture practices.
- To improve the knowledge and technical skills for the identification of cultivable fin fish and shell fish.

Syllabus  
Course Details

Unit	Learning Units	Lecture Hours
I	<p>UNIT- I: Introduction Status, scope and prospects of freshwater aquaculture in the world, India and AP Status, scope and prospects of brackish water aquaculture in the world, India and AP Freshwater and brackish water resources in India. Special culture systems - brief study of culture in running water, recirculatory systems, cages and pens, sewage-fed fish culture.</p>	10
II	<p>UNIT-II: Culture of carp, air-breathing, and exotic fishes Bundh breeding and Induced breeding of Indian major carp by hypophysation technique .Synthetic harmones used for induced breeding of carps. Types of fish hatcheries- traditional, Chinese and jar hatcheries. Preparation and Management of Indian major carp culture ponds – nursery, rearing and grow-out ponds. Culture of air-breathing fishes in India; Pangasius fish farmin Exotic fishes introduced to India and their impact on indigenous species. Composite fish culture of Indian and exotic carps – compatibility and competition.</p>	10
III	<p>UNIT-III: Culture of prawn and ornamental fishes Breeding and hatchery management of freshwater prawn, <i>Macrobrachium rosenbergii</i>. Culture of <i>Macrobrachium rosenbergii</i> and <i>M. malcolmsonii</i> – biology, seed production, pond preparation, stocking, management, feeding, morph types and harvesting. Ornamental fish culture– Common freshwater and marine ornamental fishes; Fabrication, setting up and maintenance of freshwater and marine aquarium. Breeding and rearing of freshwater ornamental fishes.</p>	15
IV	<p>UNIT-IV: Culture of shrimp and crab Breeding and Hatchery management of a typical penaeid shrimp (<i>Penaeus monodon</i> or <i>Litopenaeus vannamei</i>) Transportation of shrimp seed and nursery management. Culture of <i>P. mondon</i> or <i>L. vannamei</i> –pond preparation, stocking, management of water, feedand diseases, and harvesting. Culture of mud crab, <i>Scylla serrata</i>.</p>	15
V	<p>UNIT-V: Culture of brackish water fishes Breeding and Culture of milk fish, <i>Chanos chanos</i>. Breeding and Culture of Asian sea bass, <i>Lates calcarifer</i>. Breeding and Culture of grey mullet, <i>Mugil cephalus</i>. Fish and shellfish culture in cages and pens.</p>	10

**A.G. & S.G.Siddhartha Degree College of Arts & Science, Vuyyuru – 521165,  
Krishna Dt. A.P. (Autonomous)**

**Semester –III  
w.e.f. 2021-2022**

Time: 3hrs

Model question paper

Title of the paper: Fresh water & Brackish water Aquaculture.

Code – AQU-301C

max.marks: 70

---

**Section – A**

Answer any **four** questions. Each question carries **five** marks.

**4 x 5= 20.**

Draw neat labeled diagrams wherever necessary.

1. Freshwater culture systems
2. Cages
3. Bundh breeding
4. Nursery pond
5. Seed production
6. Feed and diseases
7. Harvesting
8. Chanos chanos

**Section – B**

Answer any **five** questions. Each question carries **Ten** marks.

**5 x 10 =50**

Draw neat labeled diagrams wherever necessary.

9. Describe the status and prospects of freshwater aquaculture in A.P.?
10. Write an essay on major cultivable Indian carps
11. Explain recent culture trends in murrels
12. . Describe composite fish culture system of Indian and exotic carps
13. Explain advantages in the culture of air-breathing fishes.
- 14 Write an essay on the commercial value of Indian freshwater prawn.
15. Breeding and Culture of milk fish

\*\*\*\*\*

**SEMESTER-III**

**Guide lines to the paper setter**  
**Max.Marks:70**

**Time: 3 hrs**

**Paper Title: - Fresh water & Brackish water Aquaculture. Paper Code: AQU-301C**

Note:1. Answer **any four** questions out of eight in Part-A. Each question carries five marks.  
4X 5 = 20M.

2. Answer any **five** questions out of eight in Part-B. Each question carries 10 marks.5 X 10 =  
50M.

	<b>PART</b>	<b>Unit –I</b>	<b>Unit – II</b>	<b>Unit-III</b>	<b>Unit – IV</b>	<b>Unit – V</b>
5 Marks Questions	<b>A</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>
10 Marks Questions	<b>B</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>
Weightage		<b>15</b>	<b>30</b>	<b>30</b>	<b>20</b>	<b>25</b>

- Note:**
1. please provide the scheme of valuation for the paper.
  2. Question paper should be both in English and Telugu media.

\*\*\*\*\*

A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU-521165,  
KRISHNA Dt.,A.P. (AUTONOMOUS)  
AQUACULTURE  
PRACTICAL – III

w.e.f. 2021-2022.  
Code: AQU- 301P  
(2hrs/week)

MAX.MARKS: 50.

**PRACTICAL SYLLABUS**

---

---

1. Identification of important cultivable carps.
2. Identification of important cultivable air-breathing fishes.
3. Identification of important cultivable fresh water prawns.
4. Identification of different life history stages of fish.
5. Identification of different life history stages of fresh water prawn Collection and study of weed fish.
6. Identification of commercially viable crabs – Scylla cerrata, Portunus pelagicus, P.sanguinolentus, Neptunus pelagicus, N. Sanguinolentus .
7. Identification of lobsters – Panulirus polyphagus, P.ornatus, P.homarus, P.sewelli, P.penicillatus.
8. Identification of oysters of nutritional significance – Crossostrea madrasensis, C.gryphoides C. cucullata, C.rivularis , Picnodanta .
9. Identification of mussels and clams.
10. Identification of developmental stages of oysters.
- 11 .Field visit to aqua farm and study of different components like dykes etc.

**PRESCRIBED BOOK(S):**

1 Jhingran VG 1998. Fish and Fisheries of India. Hindusthan Publishing Corporation, New Delhi

**REFERENCES:**

1. Santharam R, N Sukumaran and P Natarajan 1987. A manual of aquaculture, Oxford-IBH, New Delhi .
2. Srivatsava 1993. Fresh water aquaculture in India, Oxford-IBH, New Delhi Marcel H 1972. Text book of fish culture.Oxford fishing news books.

\*\*\*\*\*





**USUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA  
DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P.  
(AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Fish health management**

**Semester: - V**

Course Code	<i>AQU-501C</i>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours/ Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-2022	Year of Offering 2021-2022	Year of Revision –	Percentage of Revision:

Objective of the course: The students understand Fresh health management and Diseases of fishes.

Course outcomes:

CO1: Provide students with knowledge about fish diseases and pathological aspects of diseases.

CO2: Learn about Fungal, Viral and Bacterial diseases of finfish.

CO3: Learn about major shrimp viral, bacterial and protozoan diseases and prevention and therapy methods.

CO4: Gain knowledge of Nutritional deficiency related diseases and antibiotic and chemotherapeutics.

CO5: Understand and learn the importance of diagnostic tools in identification of diseases and

application and development of vaccines. To know about production of disease free seeds and good feed management.

**Learning Objectives:**

- To understand the principles of disease diagnosis and fish health management.
- To know the prophylactic and therapeutic methods to control the diseases.
- To understand the defence mechanism and immune system in fish and shrimp.
- To gain detailed knowledge on the disease symptoms, causative agent, preventive measures and treatment for microbial, parasitic, nutritional and environmental disorders in fish and shrimp.
- To understand the diagnosis tools that is followed in field of aquaculture and vaccine production for fish immunization.

Syllabus  
Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>UNIT I: Pathology and parasitology</b>            Introduction to fish diseases –Definition and categories of diseases – Disease and environment            Disturbance in cell structure – changes in cell metabolism, progressive and retrogressive tissue changes, types of degeneration, infiltration, necrosis, cell death and causes            Atrophy, hypertrophy, neoplasms, inflammation, healing and repair</p>	10
II	<p><b>UNIT II: Diseases of fin fish.</b>            Fungal diseases (both of shell and finfish) – Saprolegniosis, brachiomyxosis, ichthyophthiriosis diseases – Lagenidium diseases – Fusarium disease, prevention and therapy            Viral diseases – Emerging viral diseases in fish, haemorrhagic septicemia, spring viremia of carps, infectious hematopoietic necrosis in trout, infectious pancreatic necrosis in salmonids, swim-bladder inflammation in cyprinids, channel cat fish viral disease, prevention and therapy            Bacterial diseases – Emerging bacterial diseases, aeromonas, pseudomonas and vibrio infections, columnaris, furunculosis, epizootic ulcerative syndrome, infectious abdominal dropsy, bacterial gill disease, enteric red mouth, bacterial kidney disease, proliferative kidney disease, prevention and therapy</p>	15
III	<p><b>UNIT III: Diseases of shell fish</b>            Major shrimp viral diseases – Baculovirus penaei, Monodon Baculovirus, Baculoviral midgut necrosis, Infectious hypodermal and hematopoietic necrosis virus, Hepatopancreatic parvo like virus, Yellow head baculovirus, white spot baculovirus.            Bacterial diseases of shell fish – aeromonas, pseudomonas and vibrio infections, luminous bacterial disease, filamentous bacterial disease. Prevention and therapy            Protozoan diseases- Ichthyophthiriasis, Costiasis, whirling diseases, trypanosomiasis Prevention and therapy</p>	12
IV	<p><b>UNIT IV: Nutritional diseases</b>            Nutritional pathology – lipid liver degeneration, Vitamin and mineral deficiency diseases. Aflatoxin and dinoflagellates.            Antibiotic and chemotherapeutics. Nutritional cataract. Genetically and environmentally induced diseases</p>	8
V	<p><b>UNIT V: Fish health management</b>            Diagnostic tools – immune detection- DNA/RNA techniques, General preventive methods and prophylaxis. Application and development of vaccines.            Quarantine – Significance, methods and regulations for transplants. Production of disease-free seeds. Evaluation criteria of healthy seeds. Good Feed management for healthy organisms, Zero water exchange, Probiotics in health management, Issues of bio security.</p>	15

**A.G. & S.G.Siddhartha Degree College of Arts & Science, Vuyyuru – 521165,  
Krishna Dt. A.P. (Autonomous)**

**Semester –V**

**Model question paper**

**Title of the paper: Fish health management.**

**Time: 3hrs.**

**w.e.f. 2021-2022**

**Code – AQU-501**

**Max.marks: 70**

**4 x 5= 20.**

**Section – A**

Answer any **four** questions. Each question carries **five** marks. Draw neat labelled diagrams wherever necessary.

1. Necrosis.
2. Atrophy
3. Lagenidium diseases
- 4 Bacterial kidney diseases.
5. Monodon Baculovirus
6. Yellow head baculovirus
7. Lipid liver degeneration
- 8, Zero water exchange.

**Section – B**

**5 x 10 =50.**

Answer any **five** questions. Each question carries **Ten** marks.

Draw neat labelled diagrams wherever necessary.

9. Write an essay on any two nutritional Requirements for cultivable fish?
10. Explain the changes in cell metabolism?
11. Explain about Bacterial diseases of shell fish?
12. Explain about channel cat fish viral disease prevention and therapy?
13. Describe the Protozoan diseases??
14. Write an essay on genetically and environmentally induced diseases?
15. Explain about application and development of vaccines?
16. Methods and regulations for transplants?

**A.G. & S.G.Siddhartha Degree College of Arts & Science, Vuyyuru – 521165,  
Krishna Dt. A.P. (Autonomous)**

**Semester - V**

**Guide lines to the Paper Setter**

**W.e.f. 2021-2022**

**Title of the paper: Fish health management**

**Code – AQU-501C**

**Time: 3hrs.**

**Max. Marks: 70.**

---

1. Answer any **four** questions out of eight in Section – A. Each question carries five marks.  
4x5 = 20M.

2. Answer any **five** questions out of eight in Section – B. Each question carries Ten marks.  
5x10= 50M.

	Section	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
<b>5 Marks Questions</b>	<b>A</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>
<b>10 Marks Questions</b>	<b>B</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>
<b>Weightage</b>		<b>20</b>	<b>30</b>	<b>20</b>	<b>20</b>	<b>25</b>

**Note:** 1. please provide the scheme of valuation for the paper.

2. Question paper should be in English medium.

\*\*\*\*\*

A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU-  
521165, KRISHNA Dt.,A.P. (AUTONOMOUS)

AQUACULTURE  
PRACTICAL -V

w.e.f. 2021-2022.  
MAX.MARKS: 50.  
(2hrs/week)

**Code: AQU- 501P**

**PRACTICAL SYLLABUS**

- 
1. Enumeration of Bacteria by TPC Method
  2. Enumeration of total Coli forms
  3. Observation of gross pathology and external lesions of fish and prawn with reference to the common diseases in aquaculture
  4. Examination of pathological changes in gills and gut lumen, lymphoid organ, muscles and nerves of fish
  5. Examination of pathological changes in gut lumen, hepatopncreas, lymphoid organ, muscles and nerves of prawn and shrimp
  6. Collection, processing and analysis of data for epidemiological investigations of viraldiseases
  7. Bacterial pathogens – isolation, culture and characterization
  8. Identification of parasites in fishes: Protozoan, Helmiths, Crustaceans
  9. AntibioGrams – preparation and evaluation
  10. Molecular and immunological techniques; Biochemical tests; PCR; ELISA; Agglutination test; Challenge tests; Purification of virus for development of vaccines (Demonstration at institutes/labs)
  11. Estimation of dose, calculation of concentration, methods of administration of various chemotherapeutics to fish and shell fish
  12. Estimation of antibiotics used in aquaculture practices
  13. Estimation of probiotics used in aquaculture
  14. Field visit to farm for health monitoring and disease diagnosis

\*\*\*\*\*

**PRESCRIBED BOOK(S):**

1. Shaperclaus W. 1991 Fish Diseases- Vol.I & II. Oxonian Press Pvt.ltd
2. Roberts RJ 1989. Fish pathology. Bailliere Tindall, New York
3. Lydia Brown 1993. Aquaculture for veterinarians- fish husbandry and medicine. Pergamon Press. Oxford

**REFERENCES:**

1. Shankar KM & Mohan CV. 2002. Fish and Shellfish Health Management. UNESCO Publ. Sindermann CJ. 1990
2. Walker P & Subasinghe RP. (Eds.). 2005 Principal Diseases of Marine Fish and Shellfish. Vols. I, II. 2nd Ed. Academic Press
3. DNA Based Molecular Diagnostic Techniques: Research Needs for Standardization and Validation of the Detection of Aquatic Animal Pathogens and Diseases. FAO Publ. Wedmeyer G, Meyer FP & Smith L. 1999.
4. Bullock G et.al., 1972 Bacterial diseases of fishes. TFH publications, New Jersey

\*\*\*\*\*

**A. G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU**

**EXTERNAL PRACTICAL- V**

**w.e.f. 2021-2022.**

**Code: AQU-501P**

**MODEL QUESTION PAPER –V**

**Time: 3 hrs.**

**Max.marks: 25m.**

I.Estimation of antibiotics used in aquaculture practices	5M.
II. Biochemical tests	5M.
III.ELISA	:5M
IV. Identify, draw labelled diagram & write notes on A, B, C, D ,E	5X2=10

TOTAL: ----- 25M.

**Guide lines for the practical Examiners**

I:Estimation of carbohydrate content in aquaculture feeds (4 marks notes & Result 1 mark.)

II:Biochemical tests. (5 marks notes)

III:ELISA (5 marks notes)

IV. ½ Mark for identification, ½ Mark for labeled diagram & 2 Mark for notes for each question.

4 specimens / slides / models.

\*\*\*\*\*

**A. G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU-521165**

**INTERNAL PRACTICAL-V**

**w.e.f. 2021-2022.**

**Code: AQU-501P**

**MODEL QUESTION PAPER -V**

**Max.marks:25M.**

**Time: 3hrs.**

1. Attendance	-----	05M.
2. Record	-----	10M.
3. Field trip	-----	10M

Total ----- 25M.

\*\*\*\*\*

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA  
DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P.  
(AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Extension, Economics & Marketing**

**Semester: - V**

Course Code	<b>AQU-502C</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours/ Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-2022	Year of Offering 2021-2022	Year of Revision –	Percentage of Revision:

Objective of the course: The students understand Extension, Economics & Marketing aspect of fisheries and aquaculture and help the students in applying their theoretical knowledge into practical in order to be self reliance and to be a good pace setters in the business world.

Course outcomes:

CO1: Gain the Knowledge of basic concepts of economics with reference to fisheries and various factors influencing the fishery products price.

CO2: Will come to know about fisheries marketing, methods of economic analysis of business organizations and preparation of project and project appraisal.

CO3: To know about application of economic principles to aquaculture operations.

CO4: Get the broad knowledge of scope and objectives, principles of fisheries extension.

CO5: Understand the importance of transfer technology of ICAR programmes and training at DAATTCentres and their role in education of aqua farmers through print and electronic media.

**Learning Objectives:**

- To explain fisheries economics and marketing.
- To understand economics constraints in fisheries development, free access to fisheries, sustainable yield curve and total revenue curve, bio economic equilibrium, factor rents welfare economic theory and its relevance for fisheries externalities.
- To understand fisheries extension methods and rural development
- Write Feasibility report



**Syllabus**  
Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>UNIT – I Introduction</b>  Meaning and scope of economics with reference to fisheries  Basic concepts of economics – goods, services, wants and utility, demand and supply, value price, market demand and individual demand, elasticity of demand, law of diminishing marginal utility  Theory of production, production function in fisheries  Various factors influencing the fishery product's price.</p>	10
II	<p><b>UNIT – II Fisheries marketing</b>  Basic marketing functions, consumer behavior and demand, fishery market survey and test marketing a product  Fish marketing – prices and price determination of fishes  Marketing institutions- primary (producer fishermen, fishermen cooperatives, and fisheries corporations) and secondary (merchant/agent/speculative middlemen)  Methods of economic analysis of business organizations  Preparation of project and project appraisal</p>	15
III	<p><b>UNIT-III Fisheries economics</b>  Aquaculture economics- application of economics principles to aquaculture operations  Various inputs and production function. Assumptions of production function in aquaculture analysis, least cost combination of inputs, laws of variable proportions  3 Cost and earnings of aquaculture systems – carp culture, shrimp farming systems, hatcheries, Cost and earnings of fishing units and freezing plants  Socio-economic conditions of fishermen in Andhra Pradesh, Role of Matsyafed and NABARD in uplifting fishermen's conditions, fishermen cooperatives  Contribution of fisheries to the national economy</p>	15
IV	<p><b>UNIT-IV Fisheries extension</b>  Fisheries extension – scope and objectives, principles and features of fisheries extension education  Fisheries extension methods and rural development  Adoption and diffusion of innovations</p>	10
V	<p><b>UNIT-V Transfer of technology</b>  ICAR programs – salient features of ORP, NDS, LLP, IRDP, ITDA, KVK, FFDA, FCS, FTI, TRYSEM  Training – meaning, training vs. education and teaching  DAATT centers and their role in tot programs, video conferencing, education of farmer through print and electronic media.</p>	15

\*\*\*\*\*

**A.G. & S.G.Siddhartha Degree College of Arts & Science, Vuyyuru – 521165,  
Krishna Dt. A.P. (Autonomous)**

**Semester –V**

w.e.f. 2021-2022

**Model question paper**

**Title of the paper:Extension, Economics & Marketing**

**Code – AQU-502C**

**Time: 3hrs.**

**Max.marks: 70**

---

**Section – A**

**4 x 5= 20.**

Answer any **four** questions. Each question carries **five** marks. Draw neat labelled diagrams wherever necessary.

1. Demand and supply.
2. Goods
3. Consumer behaviour
- 4.Preparation of project
5. NABARD
- 6.Scope and objectives
7. IRDP
8. Salient features of ORP

**Section – B**

**5 x 10 =50.**

Answer any **five** questions. Each question carries **Ten** marks. Draw neat labelled diagrams wherever necessary.

9. Write an essay on any two nutritional Requirements for cultivable fish?
- 10.Explainthemarket demand and individual demand?
- 11.Explain aboutproduction function in fisheries?
12. Give an account of Marketing institutions?
- 13.Methods of economic analysis of business organizations?
14. Write an essay onshrimp farming systems?
- 15.Explain aboutFisheries extension methods and rural development?
- 16.DAATT centers and their role in tot programs?

\*\*\*\*\*

**A.G. & S.G.Siddhartha Degree College of Arts & Science, Vuyyuru – 521165,  
Krishna Dt. A.P. (Autonomous)**

**Semester - V**

**Guide lines to the Paper Setter.**

**W.e.f. 2021-2022**

**Title of the paper: Extension, Economics & Marketing**

**Code – AQU-502C**

**Time: 3hrs.**

**Max. Marks: 70.**

---

1. Answer any **four** questions out of eight in Section – A.

Each question carries five marks.  $4 \times 5 = 20M$ .

2. Answer any **five** questions out of eight in Section – B

Each question carries Ten marks.  $5 \times 10 = 50M$ .

	Section	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
<b>5 Marks Questions</b>	<b>A</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>
<b>10 Marks Questions</b>	<b>B</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>
<b>Weightage</b>		<b>30</b>	<b>30</b>	<b>25</b>	<b>20</b>	<b>25</b>

**Note:** 1. please provide the scheme of valuation for the paper.

2. Question paper should be in English medium.

\*\*\*\*\*

A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU-  
521165, KRISHNA Dt.,A.P. (AUTONOMOUS)

AQUACULTURE  
PRACTICAL -VI

w.e.f. 2021-2022.

**Code :AQU- 502P**

**MAX.MARKS : 50.**

**(2hrs/week)**

**PRACTICAL SYLLABUS**

---

**PRACTICAL:**

Project work/on-job training at industry.

\*\*\*\*\*

**PRESCRIBED BOOK(S):**

1. Adivi Reddy sv 1997. An introduction to extension education. Oxford & IBH Co.Pvt. Ltd. New Delhi
2. Jayaraman R 1996. Fisheries Economics. Tamilnadu Veterinary and Animal Science University. Tuticorn
3. Subba Rao N 1986. Economics of Fisheries. Daya publishing house, Delhi

**REFERENCES:**

1. Dewwett KK and Varma JD 1993. Elementary economic theory. S.chand, New Delhi
2. Korakandy R 1996. Economics of Fisheries Mangement. Daya Publishing House, Delhi
3. Tripathi SD 1992. Aquaculture Economics. Asian Fisheries Society, Mangalore.

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF BOTANY**

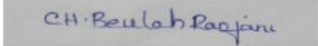


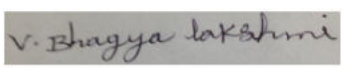
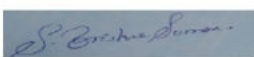
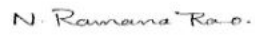


**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**27-10-2021**

**Minutes of the meeting of Board of studies in Botany for the Autonomous courses of AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru, held at 10:30 A.M on 27-10-2021 in the Department of Botany through online.**

**Members Present:-**

- 1)..........Chairman      Head, Department of Botany  
(Smt. CH. Beulah Ranjani)      AG & SG S Degree College of Arts &  
Science  
Vuyyuru- 521165.
- 2)..........University      Department of Botany &  
(Sri. Dr. K. Ramesh)      Nominee      Head (I/c) Botany,  
The Hindu College, Guntur .
- 3)..........Academic      Lecture in Botany,  
(Sri. Dr. Ch. Srinivasa Reddy) Council Nominee      SRR& CVR Govt. Degree College,  
Vijayawada, 520004.
- 4)..........Academic      Head, Department of Botany  
(Smt. V. Bhagya Lakshmi) Council Nominee      SDMSK,  
Vijayawada,
- 5)..........Industrialist.      Natural farming.  
(Sri. S. Krishna Suman)      yakamuru  
Vuyyuru, Krishna d.t
- 6)..........Member      Ad hoc Lecturer in Botany  
( Sri. N. Ramana Rao)      AG & SGS Degree College of Arts &  
Science (Autonomous),  
Vuyyuru-521165.
- 7)..........Member      Ad hoc Lecturer in Botany  
(Ms. G. Rebecca Rachel)      AG & SGS Degree College of Arts &  
Science (Autonomous),  
Vuyyuru-521165.
- 8)..........student representative      Lecturer in chaitanya college,  
(Ms K. Anusha MSc)      Gudiwada

**Agenda for B.O.S Meeting:**

1. To recommend the syllabi (Theory & Practical), Model question paper for I Semester of I B.Sc (BZC, AQUA ) in the academic year 2021-22.
2. To recommend the syllabi (Theory & Practical), Model question paper & Guide lines for III Semester of II B.Sc (BZC,AQUA ) in the academic year 2021-22.
3. To recommend the syllabi (Theory & Practical), Practical syllabus, Model question paper & Guide lines for V Semesters of III B. Sc (BZC, AQUA) for the academic year 2021-22
4. To recommend the Blue print for the Semester –End exams for I, III & V Semesters of I, II & III B. Sc (BZC, AQUA) for the academic year 2021-22.
5. To recommend the teaching and evaluation methods to be followed under Autonomous statues.
6. Any other matter.

CH. Beulah Rajani

**Chairman**

## RESOLUTIONS

1. It is resolved to continue the same syllabi (Theory & Practical), model question paper & guide lines to be followed by the question paper setters of Botany of I semester of I B.Sc (B.Z.C, AQUA) under Choice Based Credit System (CBCS) approved by the Academic Council of 2021-22.
2. It is resolved to implement the syllabi (Theory & Practical), model question paper & guide lines to be followed by the question papers under Choice Based Credit System (CBCS) setters of Botany of III semesters of II B.Sc. (B.Z.C, AQUA) approved by the Academic Council of 2021 -22.
3. It is resolved to implement the same syllabi & model papers under Choice Based Credit System (CBCS) setters of Botany of V semesters of III B.Sc. (B.Z.C, AQUA) approved by the Academic Council of 2021-22.
4. It is resolved to continue the same Blue prints of I, III & V Semesters of B. Sc Botany for the Academic year 2021-22..
5. It is resolved to continue the following teaching and evolution methods for the Academic year 2021-22.
6. Any other matter.

### **Teaching methods:**

- Besides the conventional methods of teaching, we use modern technology i.e. Using of OHP and LCD projector to display on U boards etc; for better understanding of concepts.

**Evaluation of a student is done by the following procedure:**

#### **I. Internal Assessment Examinations:**

- **Out of maximum 100 marks** in each paper for **II & III B.Sc** , **30 marks** shall be allocated for internal assessment.
- Out of these 30 marks, 20 marks are allocated for announced tests. Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks are allocated on the basis of candidate's percentage of attendance, 5 marks for seminars / assignments for the III & V semesters.
- It is resolved to continue the same as approved by Academic Council in 2021-22.
- There is no pass minimum for internal assessment for I,II,III B.Sc
- **Out of maximum 100 marks** in each paper for **I B.Sc**, **25marks** shall be allocated for internal assessment.
- Out of these 25 marks, 20 marks are allocated for announced tests. Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks are allocated on the basis of candidate's percentage of attendance / assignments for the I semester.

#### **II. Semester-End Examinations:**

- The maximum marks for I B.Sc (BZC, AQUA) Semester - End examinations shall be 75 marks and duration of the examination shall be 3 Hours.
- The maximum marks for II & III B.Sc (BZC, AQUA) Semester-End examinations shall be 70 marks and duration of the examination shall be 3 Hours. Even through the candidate is absent for two IA-EXAMS /obtain zero marks the external marks are consider ( if the candidate gets 40/70) and the result shall be declared as "PASS"
- Semester-End examinations shall be conducted in theory papers at the end of every semester while in practical papers; these examinations are conducted at end of I, III, & V semesters.
- Discussed and recommended for organizing Seminars, Guest lectures, Work-shops to upgrade the Knowledge of students, for the approval of the Academic Council.

**Note: Only for the semester I, we are following same syllabus, question paper, guidelines of P.B. Siddhartha degree college & SDMS Mahila kalasala .**

**Chairman**



## Course Structure of BZC, AQUA Syllabus

year	semester	Paper code	Title of the paper	Marks(100)		Credits
				Internal assessment	End semester	
I	I	BOTIIA	Fundamentals of Microbes and Non-vascular plants	25	75	4
			Practical-I	10	40	2
II	III	BOT-301	Anatomy of angiosperms, Plant Ecology and Biodiversity	30	70	3
			Practical-III	25	25	2
III	V	BOT-501	Cell Biology, Genetics and Plant Breeding.	30	70	3
			Practical-v – 501	15	35	2
III	V	BOT-502	Plant ecology and Phyto geography	30	70	3
			Practical-v- 502	15	35	2

# A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru- 521165.

NAAC re accredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

## Title of the Paper: Fundamentals of Microbes and Non-vascular Plants

Semester : I

Course Code	<b>BOT11A</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	25
No. of Lecture Hours / Week	4	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :	Year of Offering:	Year of Revision:	Percentage of Revision.

### Learning Objectives:

On successful completion of this course, the students will be able to:

1. To understand origin of life on the earth and analyze structure, disease symptoms and transmission of plant viruses.
2. To understand the diversity and characteristics of Prokaryotes.
3. To understand the characteristics of Fungi and Lichens.
4. To understand the characteristics of Algae.
5. To understand the characteristics of Bryophyta.

### PREREQUISITE

- Knowledge of microbes, thallophytes and Bryophytes at +2 level

### COURSE OUTCOMES

By the end of the course students will be able to

CO 1	Explain origin of life on the earth.
CO 2	Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.
CO 3	Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
CO 4	Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.
CO 5	Evaluate the ecological and economic value of microbes, thallophytes and bryophytes.

## SYLLABUS

<b>UNIT – I</b>	<p style="text-align: center;"><b>Origin of life and viruses</b></p> <p>Origin of life, concept of primary Abiogenesis; Miller and Urey experiment. Five kingdoms classification of R.H. Whittaker. Discovery of microorganisms, Pasteur experiments, germ theory of diseases. Shape and symmetry of viruses; structure of TMV and Gemini virus; multiplication of TMV, a brief account of Prions and Viroids A general account on symptoms of plant diseases caused by Viruses. Transmission of plant viruses and their control. Significance of viruses in vaccine production, bio-pesticides</p>
<b>UNIT – II</b>	<p style="text-align: center;"><b>Special groups of Bacteria and Eubacteria</b></p> <p>Brief account of Archaeobacteria, Actinomycetes and Cyanobacteria. Cell structure and nutrition of Eubacteria. Reproduction- Asexual (Binary fission and endospores) and bacterial recombination (Conjugation, Transformation, Transduction). Economic importance of Bacteria with reference to their role in Agriculture and industry (fermentation and medicine) A general account on symptoms of plant diseases caused by Bacteria; Citrus canker</p>
<b>UNIT – III</b>	<p style="text-align: center;"><b>Fungi &amp; Lichens</b></p> <p>General characteristics of fungi and Ainsworth classification (upto classes). Structure, reproduction and life history of (a)<i>Rhizopus</i> (Zygomycota) and (b) <i>Puccinia</i> (Basidiomycota). Economic uses of fungi in food industry, pharmacy and agriculture. A general account on symptoms of plant diseases caused by Fungi; Blast of Rice. Lichens- structure and reproduction.</p>
<b>UNIT – IV</b>	<p>General characteristics of Algae (pigments, flagella and reserve food material), Fritsch classification (upto classes). Thallus organization and life cycles in Algae. Occurrence, structure, reproduction and life cycle of a) <i>Spirogyra</i> (Chlorophyceae) and (b) <i>Polysiphonia</i> (Rhodophyceae). Economic importance of Algae</p>
<b>UNIT – V</b>	<p style="text-align: center;"><b>Bryophytes</b></p> <p>5.1. General characteristics of Bryophytes; classification upto classes. 5.2. Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life cycle of (a) <i>Marchantia</i> (Hepaticopsida) and (b) <i>Fumaria</i> (Bryopsida). General account on evolution of sporophytes in Bryophyta</p>

**Text books:**

1. Botany – I (Vrukshasastram-I) : Telugu Akademi, Hyderabad
2. Pandey, B.P. (2013) *College Botany, Volume-I*, S. Chand Publishing, New Delhi

**Books for Reference:**

1. Prescott, L. Harley, J. and Klein, D. (2005) *Microbiology, 6th edition*, Tata McGraw –Hill Co. New Delhi.
2. Alexopoulos, C.J., C.W.Mims&M.Blackwell (2007) *Introductory Mycology*, Wiley& Sons, Inc., New York
3. Fritsch, F.E. (1945) *The Structure & Reproduction of Algae (Vol. I & Vol.II)* Cambridge University Press Cambridge, U.K..

**A .G & S .G. SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYYURU**

(An Autonomous college in the jurisdiction of Krishna University)

**MODEL QUESTION PAPER- Theory Examination(s) at Semester end 2021-2022**

**TITLE OF THE PAPER: Fundamentals of Microbes and Non-vascular Plants (Viruses, Bacteria, Fungi, Lichens, Algae and Bryophytes)** Course Code: BOTT11A

Max. Time: 3 Hrs.

Max. Marks: 75 M

**SECTION – A**

**Answer FIVE of the following questions. Draw labelled diagrams wherever necessary. 5 x 5=25M  
ONE question should be given from each Unit in the syllabus.**

1. Five kingdom classification of Whittaker **CO1-L2**
2. Germ theory of diseases **CO1-L2**
3. Which groups of organisms are once considered as algae? Give an account of general characters of that group **CO2- L1**
4. What are the symptoms of citrus canker? Mention the causal organism of citrus canker. **CO2- L2.**
5. Ainsworth classification of fungi **CO-3 L2**
6. Why lichens are considered as unique and composite organisms? **CO-3 L1**  
Why diplobiontic life cycle is called so? Mention an alga that shows diplobiontic life cycle. List out the phases exhibited in one such life cycle studied by you. **CO-4 L1**
8. Vegetative reproduction in Bryophytes. **CO5-L2**

**SECTION – B**

**Answer the following questions.**

**5x10= 50 M**

**Two questions (A & B) are to be given from each Unit in the syllabus (internal choice in each unit). Student has to answer 5 questions by choosing one from a set of questions given from a Unit.**

- 9 a) Give an account of structure and multiplication of TMV? **CO1- L2**  
OR  
b) Explain the significance of viruses in vaccine production, bio-pesticides . **CO1-L2**
10. a) Whether bacteria exhibit sexual reproduction or not ? Elucidate different methods of bacterial recombination. **CO2- L2**  
OR  
b) Explain the role of bacteria in agriculture and industry . **CO2- L2**
- 11 a) Why *Puccinia* is called as macro cyclic rust? Explain the stages of the fungus on Primary host. **CO3-L1.**  
OR  
b) Why lichens are considered as 'pioneers of colonization'? Write about reproduction in Lichens. **CO3-L1**
- 12 a). What is thallus? Describe various types of thalli found in algae. **CO4-L2**  
OR  
b) Explain life cycle of *Spirogyra* . **CO-4 L2**
13. a) Describe morphological and anatomical features of *Marchantia*. **CO5- L2**  
OR  
b) What is the dominant phase in the life cycle of bryophytes?  
Give account on of sporophyte evolution in Bryophytes. **CO5-L 2**

**A .G & S .G. SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYYURU**

(An Autonomous college in the jurisdiction of Krishna University)

**Practical Syllabus**

**SEMESTER- I**

**PAPER- I**

**CREDITS : 02**

<b>BOTANY</b>	<b>BOTT11A</b>	<b>WEF: 2021-2022</b>	<b>B. Sc (BZC), AQUA</b>
---------------	----------------	-----------------------	--------------------------

**Title of the paper: Fundamentals of Microbes and Non-vascular Plants**

**(Viruses, Bacteria, Fungi, Lichens, Algae and Bryophytes)**

**NO OF HOURS: 30**

**Learning outcomes:** On successful completion of this practical course, student shall be able to

- Demonstrate the techniques of use of lab equipment, preparing slides and identify the material and draw diagrams exactly as it appears.
- Observe and identify microbes and lower groups of plants on their own.
- Demonstrate the techniques of inoculation, preparation of media etc.
- Identify the material in the permanent slides etc.

**Practical Syllabus:**

1. Knowledge of Microbiology laboratory practices and safety rules.
2. Knowledge of different equipment for Microbiology laboratory (Spirit lamp, Inoculation loop, Hot-air oven, Autoclave/Pressure cooker, Laminar air flow chamber and Incubator) and their working principles. (In case of the non- availability of the laboratory equipment the students can be taken to the local college/clinical lab. with required infrastructural facilities or they can enter a linkage with the college/lab for future developments and it will fetch credits during the accreditation by NAAC).
3. Demonstration of Gram's staining technique for Bacteria.
4. Study of Viruses (Corona, Gemini and TMV) using electron micrographs/ models.
5. Study of Archaeobacteria and Actinomycetes using permanent slides/ electron micrographs/diagrams.
6. Study of *Anabaena* and *Oscillatoria* using permanent/temporary slides.
7. Study of different bacteria (Cocci, Bacillus, Vibrio and Spirillum) using permanent or temporary slides/ electron micrographs/ diagrams.
8. Study/ microscopic observation of vegetative, sectional/anatomical and reproductive structures of the following using temporary or permanent slides/ specimens/ mounts
  - a. Fungi : *Rhizopus*, *Penicillium* and *Puccinia*.
  - b. Lichens: Crustose, foliose and fruticose

c. Algae : *Volvox*, *Spirogyra*, *Ectocarpus* and *Polysiphonia*

d. Bryophyta : *Marchantia* and *Funaria*

9. Study of specimens of Tobacco mosaic disease, Citrus canker and Blast of Rice.

**Suggested Manuals:**

1. Vasista, B.R. (2018). Botany for degree students - Algae - S. Chand and company Ltd., New Delhi.

2. Dubey, H.C (2018). A text book of Fungi, bacteria and Viruses. Vikas publishing House, New Delhi.

3. Smith, G.M (1955). Cryptogamic Botany (Vol. I Algae, Fungi, & Lichens)

McGraw-Hill Book Co., New York

**A .G & S .G. SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYURU**

(An Autonomous college in the jurisdiction of Krishna University)

**MODEL QUESTION PAPER FOR PRACTICAL EXAMINATION**

Semester – I/ Botany Core Course – 1

**TITLE OF THE PAPER: Fundamentals of Microbes and Non-vascular Plants  
(Viruses, Bacteria, Fungi, Lichens, Algae and Bryophytes)**

Max. Time: 3 Hrs.

Max. Marks: 40

---

1. Take the T.S. of material 'A' (Fungi), make a temporary mount and make comments about identification. 8M
2. Identify any 2 algae from the mixture (material 'B') given with specific comments about identification. 8M
3. Take the T.S. of material 'C' (Bryophyta), make a temporary mount and make comments about identification. 8M
4. Identify the following with specific reasons 4x2=8M
  - A. A laboratory equipment of Microbiology
  - B. B. Virus
  - C. Archaeobacteria /Ascomycete /Cyanobacteria/ Eu-Bacteria
  - D. Lichen
5. Record + Viva-voce 5+3 = 8 M



**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru - 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

**Semester: III**

Course Code	<b>BOT301C</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2019 - 20	Year of Offering: 2021 - 22	Year of Revision: 2021 - 22	Percentage of Revision: 50 %

**Learning Objectives:**

On successful completion of this course, the students will be able to:

1. To understand Anatomy of Angiosperms - organization of tissues and tissue systems in plants..
2. To understand the various aspects of embryology.
3. To understand the basic concepts of plant ecology.
4. To understand the various parameters of population and community ecology.
5. To understand the importance of biodiversity

**THEORY: Learning outcomes:**

- On successful completion of this course, the students will be able to;
  - Understand on the organization of tissues and tissue systems in plants.
  - Illustrate and interpret various aspects of embryology.
  - Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
  - Appraise various qualitative and quantitative parameters to study the population and community ecology.
  - Correlate the importance of biodiversity and consequences due to its loss.
  - Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.
-

## SYLLABUS

<b>Unit – 1</b>	<p style="text-align: center;"><b>Anatomy of Angiosperms</b></p> <p>Organization of apical meristems: Tunica-carpus theory and Histogen theory. Tissue systems–Epidermal, ground and vascular. Anomalous secondary growth in <i>Boerhaavia</i> and <i>Dracaena</i>. Study of timbers of economic importance - Teak, Red sanders and Rosewood.</p>
<b>Unit – 2</b>	<p style="text-align: center;"><b>Embryology of Angiosperms</b></p> <p>Structure of anther, anther wall, types of tapetum. Microsporogenesis and development of male gametophyte. Structure of ovule, megasporogenesis; monosporic (<i>Polygonum</i>), bisporic (<i>Allium</i>) and tetrasporic (<i>Peperomia</i>) types of embryo sacs. Outlines of pollination, pollen – pistil interaction and fertilization. Endosperm - Types and biological importance - Free nuclear, cellular, helobial and ruminant. Development of Dicot (<i>Capsella bursa-pastoris</i>) embryo.</p>
<b>Unit – 3</b>	<p style="text-align: center;"><b>Basics of Ecology</b></p> <p>Ecology: definition, branches and significance of ecology. Ecosystem: Concept and components, energy flow, food chain, food web, ecological pyramids. Plants and environment: Climatic (light and temperature), edaphic and biotic factors. Ecological succession: Hydrosere and Xerosere.</p>
<b>Unit – 4</b>	<p style="text-align: center;"><b>Population, Community and Production Ecology</b></p> <p>Population ecology: Natality, mortality, growth curves, ecotypes, ecads Community ecology: Frequency, density, cover, life forms, biological spectrum Concepts of productivity: GPP, NPP and Community Respiration Secondary production, P/R ratio and Ecosystems</p>
<b>Unit – 5</b>	<p style="text-align: center;"><b>Basics of Biodiversity</b></p> <p>Biodiversity: Basic concepts, Convention on Biodiversity - Earth Summit. Value of Biodiversity; types and levels of biodiversity and Threats to biodiversity Biodiversity Hot spots in India. Biodiversity in North Eastern Himalayas and Western Ghats. Principles of conservation: IUCN threat-categories, RED data book Role of NBPGR and NBA in the conservation of Biodiversity.</p>

**Text books:**

1. Botany – III (Vrukshasastram-I) : Telugu Akademi, Hyderabad
2. Botany – IV (Vrukshasastram-II) : Telugu Akademi, Hyderabad
3. Pandey, B.P. (2013) *College Botany, Volume-II*, S. Chand Publishing, New Delhi

**Books for Reference:**

- Esau, K. (1971) *Anatomy of Seed Plants*. John Wiley and Son, USA.
- Paula Rudall (1987) *Anatomy of Flowering Plants: An Introduction to Structure and Development*. Cambridge University Press, London
- Bhojwani, S. S. and S. P. Bhatnagar (2000) *The Embryology of Angiosperms (4<sup>th</sup> Ed.)*, Vikas Publishing House, Delhi.

**A.G & S.G. Siddhartha Degree College of Arts & Science**

An autonomous college in the jurisdiction of Krishna University

BOTANY	<b>BOT- 301C</b>	w.e.f. 2021-22	B. Sc. (BZC), AQUA
--------	------------------	----------------	--------------------

**II B. Sc – BOTANY**

**Model Question Paper**

**SEMESTER- III**

**PAPER-III: Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

**Time: 3 Hours**

**Max. Marks: 70**

---

**SECTION-A**

Answer any **four** of the following questions.

**4x 5 = 20Marks**

(Draw diagrams wherever necessary)

1. Histogen theory.
2. Rosewood.
3. Ruminant endosperm
4. Energy flow
5. Significance of ecology.
6. Natality
7. GPP.
8. NBPGR

**SECTION-B**

Answer any **five** of the following questions.

**5x10 = 50Marks**

(Draw diagrams wherever necessary)

9. Explain about Organization of apical meristems:
10. Describe the Anomalous secondary growth in *Boerhaavia*?
11. Write an essay on ICBN.
12. Describe vegetative & floral characters of Asclepiadaceae.
13. Write an essay on ecological pyramids?
14. What is Ecological succession: Write an essay on Hydrosere?
15. Write the characteristics of population ecology?
16. Give an account of Value of Biodiversity?

**Guide lines for paper setter:** (for Paper III – BOT- 301) w.e.f 2021-22

1. In **section A**: Unit II, V must carry **one** question, Unit I,III & IV must carry **two** questions.
2. In **section- B**: Set minimum **two** questions from Unit I, II, III . **One** question each from Unit IV and Unit V.
3. See the following table and Model paper for marks distribution.
4. Please provide the scheme of valuation for the paper.
5. Question paper should be both in English and Telugu media.

Unit	Section - A		Section - B		Weightage in
	Questions	Marks	Questions	Marks	Marks
Unit – I	2		2		
	10		20		30
Unit - II	1		2		
	05		20		25
Unit – III	2		2		
	10		20		30
Unit – IV	2		1		
	10		10		20
Unit – V	1		1		
	05		10		15
Max. Q & marks	8	(x 5) = 40	8	(x 10) = 80	(Total questions =16) Total marks = 120
Max. Q and marks for Valuation	Questions	Marks	Questions	Marks	Max. marks
	4	(4 X 5M) = 20 M	5	(5 X 10M)= 50 M	70M

**INTERNAL EXAMS - 30Marks**

**(20 marks** for unit tests, 5marks for Attendance **5** marks for seminars)

## Practical syllabus of Botany Core Course – 3 /Semester – III

### Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity

(Total hours of laboratory exercises 30 Hrs. @ 02 Hrs./Week)

#### Course Outcomes:

On successful completion of this practical course students shall be able to:

1. Get familiarized with techniques of section making, staining and microscopic study of vegetative, anatomical and reproductive structure of plants.
2. Observe externally and under microscope, identify and draw exact diagrams of the material in the lab.
3. Demonstrate application of methods in plant ecology and conservation of biodiversity and qualitative and quantitative aspects related to populations and communities of plants.

#### Practical Syllabus

1. Tissue organization in root and shoot apices using permanent slides.
2. Anomalous secondary growth in stems of *Boerhavia* and *Dracaena*.
3. Study of anther and ovule using permanent slides/photographs.
4. Study of pollen germination and pollen viability.
5. Dissection and observation of Embryo sac haustoria in *Santalum* or *Argemone*.
6. Structure of endosperm (nuclear and cellular) using permanent slides / Photographs.
7. Dissection and observation of Endosperm haustoria in *Crotalaria* or *Coccinia*.
8. Developmental stages of dicot and monocot embryos using permanent slides / photographs.
9. Study of instruments used to measure microclimatic variables; soil thermometer, maximum and minimum thermometer, anemometer, rain gauge, and lux meter. (visit to the nearest/local meteorology station where the data is being collected regularly and record the field visit summary for the submission in the practical).
10. Study of morphological and anatomical adaptations of hydrophytes and xerophytes (02 each).
11. Quantitative analysis of herbaceous vegetation in the college campus for frequency, density and abundance.
12. Identification of vegetation/various plants in college campus and comparison with Raunkiaer's frequency distribution law.
13. Find out the alpha-diversity of plants in the area.
14. Mapping of biodiversity hotspots of the world and India

**Model paper for Practical Examination**

Semester – III/ Botany Core Course – 3

**Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

Max. Time: 3 Hrs.

Max. Marks: 50

---

1. Take T.S. of the material 'A' (Anatomy), prepare a temporary slide and justify the identification with specific reasons. 7M
2. Write the procedure for the experiment 'B' (Embryology) and demonstrate the same. 6M
3. Take T.S. of the material 'C', prepare a temporary slide and justify the identification with specific reasons.  
4M
4. Identify the following with specific reasons. 4 x 2 = 8 M  
D. Anatomy/Embryology  
E. Ecology instrument  
F. Mapping of Biodiversity hot spot  
G. Endemic/endangered plant/animal

Total Marks: 25

**Internals:**

1. Record ..... 10M
2. Viva-voce .....3M
3. Field trip .....4M
4. Internal practical exam ..... 8M

Total Marks:25

**Total marks: 50**

**Suggested co-curricular activities for Botany Core Course-3 in Semester-III:**

**A. Measurable :**

**a. Student seminars :**

1. Anatomy in relation to taxonomy of Angiosperms.
2. Nodal anatomy
3. Floral anatomy
4. Embryology in relation to taxonomy of Angiosperms.
5. Apomictics and polyembryony.
6. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.
7. Deforestation and Afforestation.
8. Green house effect and ocean acidification.
9. The Montreal protocol and the Kyoto protocol.
10. Productivity of aquatic ecosystems.
11. Mangrove ecosystems in India.
12. Kollerulake – Ramsar site.
13. Biodiversity hotspots of the world.
14. Origin of Crop plants - Vavilov centers
15. Agrobiodiversity
16. International organizations working on conservation of Biodiversity
17. Nagoya protocol – ABS system.
18. Endemic and endangered plants in Andhra Pradesh.

**b. Student Study Projects :**

1. Stomata structure in plants from college campus/ their native place.
2. Report on xylem elements in plants using maceration technique.
3. Collection of information on famous herbaria in the world and preparation of a report.
4. Microscopic observations on pollen morphology from plants in college Campus/ their native locality.
5. Study report on germination and viability of pollen in different plants.
6. Observation of anthesis time in different plants and their pollinators.
7. A report on autecology and synecology of some plants in college campus or their native place.
8. Collection of photos of endemic/endangered plant and animal species to Make an album.



9. Biodiversity of the college or their own residential/ native area.
10. Collection of seeds/vegetative organs of rare plant species from their localities and to raise/grow in college garden

**C .Assignments:** Written assignment at home / during 'O' hour at college; preparation of charts with drawings, making models etc., on topics included in syllabus.

**B. General :**

1. Visit to an arboretum/silviculture station/Forest research institute to see the live timber yielding plants or to visit a local timber depot. to observe various woods.
2. Field visit to a nearby ecosystem to observe the abiotic-biotic relationships.
3. Visit to National park/Sanctuary/Biosphere reserve etc., to observe in-situ conservation of plants and animals.
4. Visit to a Botanical garden or Zoo to learn about ex-situ conservation of rare plants or animals.
5. Group Discussion (GD)/ Quiz/ Just A Minute (JAM) on different modules in syllabus of the course.

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru - 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: Cell Biology, Genetics and Plant Breeding**

**Semester : V**

Course Code	<b>BOT-501</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2017-18	Year of Offering: 2017 - 18 2021-22	Year of Revision:2021 - 22 2021-22	Percentage of Revision: 50 %

**Learning Objectives:**

On successful completion of this course, the students will be able to:

1. To understand the Cell, Structure and functions
2. To understand the Genetic Material
3. To understand the basic concepts of plant ecology.
4. To understand the various parameters of population and community ecology.
5. To understand the importance of biodiversity

## SYLLABUS

<b>UNIT-I</b>	<b>Cell Biology</b> Cell, Ultra Structure and functions of cell wall. Molecular Organization of cell membranes. Chromosomes; morphology, organization of DNA in a chromosome (Nucleosome model) Euchromatin and Heterochromatin.
<b>UNIT-II</b>	<b>Genetic Material</b> DNA as the Genetic Material: Griffith's and Avery's Transformation Experiment. Hershey - Chase Bacteriophage experiment. DNA Structure (Watson & crick model) and replication of DNA (SemiConservative). Types of RNA (mRNA, tRNA, rRNA), their structure and function.
<b>UNIT- III</b>	<b>Mendelian Inheritance</b> Mendelian Inheritance (Mono – Di-hybrid Crosses), Back cross and Text cross. Linkage: concept, complete and In-complete Linkage, Coupling and Repulsion; Linkage Maps Based on Two and Three Point cross. Crossing over concept and significance.
<b>UNIT-IV</b>	<b>Gene Expression</b> Organization of gene, Transcription and Translation. Mechanism and regulation of Gene Expression in Prokaryotes (Lac operon). Mutations: Chromosomal Aberrations, Gene Mutations and Transposable Elements
<b>UNIT-V</b>	<b>Plant Breeding</b> Introduction and objectives of Plant Breeding. Methods of Crop Improvement: Procedure, Advantages and limitations of Introduction, Selection and Hybridization (Out lines only).

**B.Sc – BOTANY**  
**SEMESTER -V. THEORY MODEL PAPER**

**Time: 3 Hours**

**Max. Marks: 70**

---

**SECTION-A**

**Answer any FOUR of the following question**  
(Draw diagrams wherever necessary)

**4 x 5=20M.**

1. Nucleosome
2. Griffith experiment.
3. t RNA
4. Back cross and test cross.
5. Transcription.
6. Three point test cross.
7. Hybridization.
8. Crossing over.

**SECTION-B**

**Answer any FIVE of the following questions.**  
(Draw diagrams wherever necessary)

**5 x 10 = 50M.**

9. Describe the Ultra structure and functions of cell membrane.
10. What is cell theory? Write about eukaryotic cell components.
11. Write about structure and replication of DNA.
12. DNA as a genetic material proof with suitable experiments.
13. Explain the Mendel's law of inheritance.
14. Define linkage. Describe the different types of Linkage.
15. Write an essay on mechanism and Regulation of gene Expression in Prokaryotes.
16. Discuss about methods of Crop improvement.

**Guide lines for paper setter:** (for Paper V-BOT-501) W.e.f. 2021-22

1. In Section A: Unit I, III, V must carry one question from each unit. Unit II must carry 2 questions and Unit IV must carry three questions.
2. In section-B: Set minimum Two questions from Unit I, II & III
3. See the following table and Model paper.
4. Please provide the scheme of valuation for the paper.
5. Question paper should be both in English and Telugu media.

Unit	Section - A		Section - B		Weightage in Marks
	Questions	Marks	Questions	Marks	
Unit – I	1		2		25
	5		20		
Unit – II	2		2		30
	10		20		
Unit –III	1		2		25
	5		20		
Unit-IV	3		1		25
	15		10		
Unit-V	1		1		15
	5		10		
Max .Q & marks	8 ( x 5 ) =40		8 ( x 10 ) = 80		(Total questions =16) Marks 120
Max. Q and marks for Valuation	Questions	Marks	Questions	Marks	Max. marks
	4		5		70
	(4 x 5 ) = 20		(5 x 10 ) = 50		

**INTERNAL EXAMS - 30Marks**  
(20 marks for unit tests, 5marks for Attendance 5 marks for seminars)

**III B.SC-BOTANY Practical paper**  
**Cell Biology, Genetics and Plant Breeding**

**SEMESTER-V**

**BOT-501-P**

**Time: 3hr**

Total hours of teaching 30hrs @ 2 hrs per week

**Max.marks:50**

---

1. Study of the structure of cell organelles through photomicrographs.
2. Study of plant cell through temporary mounts.
3. Study of various stages of mitosis using cytological preparation of Onion root tips.
4. Study of DNA packing by micrographs.
5. Numerical problems solving Mendal's Laws of inheritance.
6. Chromosome mapping using 3 point test cross data.
7. Hybridization techniques –emasculation. Bagging (for demonstration only).
8. Field visit to a plant breeding research station.

**III B.SC-SEMESTER-V, BOTANY PRACTICAL MODEL PAPER**

**PAPER –V: CELL BIOLOGY GENETICS AND PLANT BREEDING**

1. Perform the Experiment A Squash technique.....12M
2. Give the experimental protocol of the experiments. B.....04M
3. Solving numerical problems on Mendelian inheritance....C, D.....2x7½=15M
4. Record.....05M
- Viva.....04M
- Internal Practical Exam.....10M

### III B.SC-BOTANY Syllabus SEMESTER-V

#### Practical paper – V: Cell Biology, Genetics and Plant Breeding

Total hours of teaching 30hrs @ 2 hrs per week

1. Perform the Experiment A.

Squash technique .....	4M
Procedure.....	4M
diagram .....	2M =10

2. Give the experimental protocol of the experiments. B.....4M

3. Genetic problem C, D

Salvation of problem.....	5M
Reasoning.....	2\2M
	2X7\2=15M

Viva .....

**Internal:**

a) Record.....	5 M.
b)Internal Practical Exam.....	10M

**Books for Reference:**

1. Old, R.W. and Primrose S.B. 1994, Principles of Gene Manipulation Blackwell Science,19 London 2. Grierson, D. and Convey S.N. 1989, Plant Molecular Biology, Blackie Publishers, NewYork.
2. Lea, P.J. and Leegood R.C. 1999, Plant Biochemistry and Molecular Biology, John Wiley and Sons, London.
3. Power C.B., 1984, Cell Biology, Himalaya Publishing Co. Mumbai
4. De. Robertis and De Robertis, 1998, Cell and Moleceular Biology, K.M. Verghese andCompany .

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru - 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: PLANT ECOLOGY & PHYTOGEOGRAPHY**

**Semester : V**

Course Code	<b>BOT-502</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2017-18	Year of Offering: 2017 - 18 2021-22	Year of Revision:2021 - 22 2021-22	Percentage of Revision: 50 %

**Learning Objectives:**

On successful completion of this course, the students will be able to:

1. To understand the elements of ecology.
2. To understand the ecosystem
3. To understand the basic concepts of plant ecology.
4. To understand the various parameters of population and community ecology.
5. To understand the importance of biodiversity



## SYLLABUS

<b>UNIT-I</b>	<b>ELEMENTS OF ECOLOGY</b>  Ecology: Definition, branches and significance of ecology. Claimatic factors: Light, Temperature. Edaphic factor: Origin, formation, composition and soil profile. Biotic factor, Ecological adaptations of Plants.
<b>Unit- II</b>	<b>Ecosystem Ecology</b> Ecosystem: concept and components, energy flow, food chain, food web, Ecological Pyramids. Productivity of ecosystem-Primary, Secondary and Net productivity. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.
<b>Unit – III</b>	<b>Population &amp; Community ecology</b> Population- defination, characteristics and importance (Density, Natality, Mortality, Growth Curves) outlines- ecotypes. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, Biological Spectrum. Ecological Succession: Hydrosere and Xerosere.
<b>Unit-IV</b>	<b>Phytogeography</b>  Principles of Phytogeography, Distribution (Wides, Endemic, Discontinuous species. Phytogeography regions of India. Endemism – types and Causes.
<b>Unit-V</b>	<b>Plant Biodiversity and its Importance</b>  Definition, Levels of Biodiversity – genetic, species and ecosystem. Biodiversity and Hot-spots of India: North Eastern, Himalayas and Western Ghats. Loss of Biodiversity-causes and Conservation (In-situ and Ex-Situ Methods).

**B.Sc – BOTANY**  
**SEMESTER –VI THEORY MODEL PAPER**  
**PLANT ECOLOGY & PHYTOGEOGRAPHY**

**Time: 3 Hours**

**Max. Marks: 70**

---

**SECTION-A**

**Answer any FOUR of the following question.**

**4 x 5= 20M.**

(Draw diagrams wherever necessary)

1. Soil profile.
2. Biotic factor.
3. Food web.
4. Energy Flow in Ecosystem.
5. Natality.
6. Biological Spectrum
7. Endemism.
8. Red-Data book.

**SECTION-B**

**Answer any Five of the following questions.**

**5 x 10 = 50M.**

(Draw diagrams wherever necessary)

9. Discusses the importance of Temperature Factor on Plant Growth.
10. Briefly Discuss the Ecological Adaptations of Xerophytes.
11. What are Ecological Pyramids? Describe the Pyramids of numbers, Biomass and Energy.
12. What are biogeochemical cycles? Give an account of Nitrogen cycle?
13. What is Plant Succession? Describe Hydrosere?
14. What are the Characters of Plant Communities?
15. What are Principles of Plant Phytogeography?
16. What is Biodiversity? Explain the Levels of Biodiversity.

**Guide lines for paper setter:** (for Paper V-BOT-502) W.e.f. 2021-22

1. In Section A: Unit I, II, III, must carry Two question from each unit. Unit IV, V must carry one question.
2. In section-B: Set minimum two questions from Unit I, II & III and Set One Question from IV, V.
3. See the following table and Model paper.
4. Please provide the scheme of valuation for the paper.
5. Question paper should be both in English and Telugu media.

Unit	Section – A		Section - B		Weightage in
	Questions	Marks	Questions	Marks	Marks
Unit – I	2		2		
		10		20	30
Unit – II	2		2		
		10		20	30
Unit – III	2		2		
		10		20	30
Unit-IV	1		1		
		5		10	15
Unit-V	1		1		
		5		10	15
Max. Q & marks	8	( x 5 ) = 40	8	( x 10 ) = 80	(Total questions = 16) Marks 120
Max. Q and marks for Valuation	Questions	Marks	Questions	Mark s	Max. marks
	4		5		
		(4 x 5 ) = 20		(5 x 10 ) = 50	70

**INTERNAL EXAMS – 30 Marks**

(20 marks for unit tests, 5 marks for assignments and remaining 5 marks for seminar etc.)

**BOTANY PRACTICAL  
PLANT ECOLOGY & PHYTOGEOGRAPHY**

SEMESTER- V

BOT-502-P

Total hours of teaching 30 hrs @ 3 hrs per week

---

---

1. Study of instruments used to measure microclimatic variables; soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, rain gauge, and lux meter.
2. Permeability (percolation; total capacity as well as rate of movement) of different soil samples.
3. Determination of soil pH
4. Study of morphological and anatomical adaptations of hydrophytes and xerophytes. (4each)
5. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method.
6. Study of Phytoplankton and macrophytes from water bodies.
7. Study of species diversity index of vegetation.
8. Estimation of Primary Productivity of an ecosystem.
9. To study field vegetation with respect to stratification, canopy cover and composition.
10. Study of plants included in agro forestry and social forestry.
11. To locate the hotspots, phyto geographical regions and distribution of endemic plants in the map of India.
12. The following practical should be conducted in the Field/lab with the help of Photographs, herbarium, Floras, Red data book- Study of endangered plants species, critically endangered plants species, vulnerable plant species and monotypic endemic genera of India.

**BOTANY PRACTICAL  
PLANT ECOLOGY & PHYTOGEOGRAPHY**

SEMESTER- V

BOT-502-P

Total hours of teaching 30 hrs @ 3 hrs per week

---

---

1. Study Project under supervision.....12 Marks
2. Experiment A ..... 07Marks
3. Anatomical adaptations of **B** (Section cutting)..... 07Marks
4. Spotters **C&D** .....(2x2 1/2) = 5 Marks
5. Record.....05Marks
6. Viva-Voc.....04Mrks
7. Internal practical exam.....10Marks

**Total = 50 Marks**

**BOTANY PRACTICAL  
PLANT ECOLOGY & PHYTOGEOGRAPHY**

SEMESTER- V

BOT-502-P

Scheme of Valuation

1. Study Project under supervision  
To study Honey Bees and Plants Yielding Honey ..... 12 Marks
2. Experiment A -determination of soil porosity/PH..... 07Marks
3. Anatomical adaptations of **B** (Section cutting)  
Xerophytes / Hydrophytes .....07Marks
4. Spotters **C&D** anemometer/rain gauze/lux meter ..... (2x2 1/2) = 5 Marks
5. Viva-Voc.....04Mrks
6. Record..... 05Marks
7. Internal practical exam..... 10Marks

**Total = 50 Marks**

**Books for Reference:**

1. Daubenmire, R.F. ( ): Plants & Environment (2nd Edn.) John Wiley & Sons.,  
New York22
2. Puri, .G.S. (1960): Indian Forest Ecology (Vol.I & II) Oxford Book Co., New Delhi  
&Calcutta.
3. Billings, W.B. (1965): Plants and the Ecosystem Wadsworth Publishing Co., Inc.,  
Belmont.
4. Misra, R. (1968): The Ecology work Book Oxford & INH Publishing Co., Calcutta

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF BOTANY**

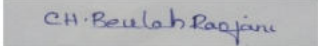


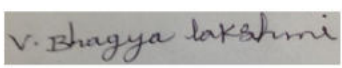
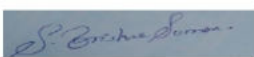
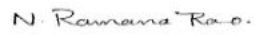


**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**27-10-2021**

**Minutes of the meeting of Board of studies in Botany for the Autonomous courses of AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru, held at 10:30 A.M on 27-10-2021 in the Department of Botany through online.**

**Members Present:-**

- 1)..........Chairman      Head, Department of Botany  
(Smt. CH. Beulah Ranjani)      AG & SG S Degree College of Arts &  
Science  
Vuyyuru- 521165.
- 2)..........University      Department of Botany &  
(Sri. Dr. K. Ramesh)      Nominee      Head (I/c) Botany,  
The Hindu College, Guntur .
- 3)..........Academic      Lecture in Botany,  
(Sri. Dr. Ch. Srinivasa Reddy) Council Nominee      SRR& CVR Govt. Degree College,  
Vijayawada, 520004.
- 4)..........Academic      Head, Department of Botany  
(Smt. V. Bhagya Lakshmi) Council Nominee      SDMSK,  
Vijayawada,
- 5)..........Industrialist.      Natural farming.  
(Sri. S. Krishna Suman)      yakamuru  
Vuyyuru, Krishna d.t
- 6)..........Member      Ad hoc Lecturer in Botany  
( Sri. N. Ramana Rao)      AG & SGS Degree College of Arts &  
Science (Autonomous),  
Vuyyuru-521165.
- 7)..........Member      Ad hoc Lecturer in Botany  
(Ms. G. Rebecca Rachel)      AG & SGS Degree College of Arts &  
Science (Autonomous),  
Vuyyuru-521165.
- 8)..........student representative      Lecturer in chaitanya college,  
(Ms K. Anusha MSc)      Gudiwada



**Agenda for B.O.S Meeting:**

1. To recommend the syllabi (Theory & Practical), Model question paper for I Semester of I B.Sc (BZC, AQUA ) in the academic year 2021-22.
2. To recommend the syllabi (Theory & Practical), Model question paper & Guide lines for III Semester of II B.Sc (BZC,AQUA ) in the academic year 2021-22.
3. To recommend the syllabi (Theory & Practical), Practical syllabus, Model question paper & Guide lines for V Semesters of III B. Sc (BZC, AQUA) for the academic year 2021-22
4. To recommend the Blue print for the Semester –End exams for I, III & V Semesters of I, II & III B. Sc (BZC, AQUA) for the academic year 2021-22.
5. To recommend the teaching and evaluation methods to be followed under Autonomous statues.
6. Any other matter.

CH. Beulah Rajani

**Chairman**

## RESOLUTIONS

1. It is resolved to continue the same syllabi (Theory & Practical), model question paper & guide lines to be followed by the question paper setters of Botany of I semester of I B.Sc (B.Z.C, AQUA) under Choice Based Credit System (CBCS) approved by the Academic Council of 2021-22.
2. It is resolved to implement the syllabi (Theory & Practical), model question paper & guide lines to be followed by the question papers under Choice Based Credit System (CBCS) setters of Botany of III semesters of II B.Sc. (B.Z.C, AQUA) approved by the Academic Council of 2021 -22.
3. It is resolved to implement the same syllabi & model papers under Choice Based Credit System (CBCS) setters of Botany of V semesters of III B.Sc. (B.Z.C, AQUA) approved by the Academic Council of 2021-22.
4. It is resolved to continue the same Blue prints of I, III & V Semesters of B. Sc Botany for the Academic year 2021-22..
5. It is resolved to continue the following teaching and evolution methods for the Academic year 2021-22.
6. Any other matter.

### **Teaching methods:**

- Besides the conventional methods of teaching, we use modern technology i.e. Using of OHP and LCD projector to display on U boards etc; for better understanding of concepts.

**Evaluation of a student is done by the following procedure:**

#### **I. Internal Assessment Examinations:**

- **Out of maximum 100 marks** in each paper for **II & III B.Sc** , **30 marks** shall be allocated for internal assessment.
- Out of these 30 marks, 20 marks are allocated for announced tests. Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks are allocated on the basis of candidate's percentage of attendance, 5 marks for seminars / assignments for the III & V semesters.
- It is resolved to continue the same as approved by Academic Council in 2021-22.
- There is no pass minimum for internal assessment for I,II,III B.Sc
- **Out of maximum 100 marks** in each paper for **I B.Sc**, **25marks** shall be allocated for internal assessment.
- Out of these 25 marks, 20 marks are allocated for announced tests. Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks are allocated on the basis of candidate's percentage of attendance / assignments for the I semester.

#### **II. Semester-End Examinations:**

- The maximum marks for I B.Sc (BZC, AQUA) Semester - End examinations shall be 75 marks and duration of the examination shall be 3 Hours.
- The maximum marks for II & III B.Sc (BZC, AQUA) Semester-End examinations shall be 70 marks and duration of the examination shall be 3 Hours. Even through the candidate is absent for two IA-EXAMS /obtain zero marks the external marks are consider ( if the candidate gets 40/70) and the result shall be declared as "PASS"
- Semester-End examinations shall be conducted in theory papers at the end of every semester while in practical papers; these examinations are conducted at end of I, III, & V semesters.
- Discussed and recommended for organizing Seminars, Guest lectures, Work-shops to upgrade the Knowledge of students, for the approval of the Academic Council.

**Note: Only for the semester I, we are following same syllabus, question paper, guidelines of P.B. Siddhartha degree college & SDMS Mahila kalasala .**

**Chairman**

## Course Structure of BZC, AQUA Syllabus

year	semester	Paper code	Title of the paper	Marks(100)		Credits
				Internal assessment	End semester	
I	I	BOTIIA	Fundamentals of Microbes and Non-vascular plants	25	75	4
			Practical-I	10	40	2
II	III	BOT-301	Anatomy of angiosperms, Plant Ecology and Biodiversity	30	70	3
			Practical-III	25	25	2
III	V	BOT-501	Cell Biology, Genetics and Plant Breeding.	30	70	3
			Practical-v – 501	15	35	2
III	V	BOT-502	Plant ecology and Phyto geography	30	70	3
			Practical-v- 502	15	35	2

# A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru- 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

## Title of the Paper: Fundamentals of Microbes and Non-vascular Plants

Semester : I

Course Code	<b>BOT11A</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	25
No. of Lecture Hours / Week	4	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :	Year of Offering:	Year of Revision...	Percentage of Revision. ...

### Learning Objectives:

On successful completion of this course, the students will be able to:

1. To understand origin of life on the earth and analyze structure, disease symptoms and transmission of plant viruses.
2. To understand the diversity and characteristics of Prokaryotes.
3. To understand the characteristics of Fungi and Lichens.
4. To understand the characteristics of Algae.
5. To understand the characteristics of Bryophyta.

### PREREQUISITE

- Knowledge of microbes, thallophytes and Bryophytes at +2 level

### COURSE OUTCOMES

By the end of the course students will be able to

CO 1	Explain origin of life on the earth.
CO 2	Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.
CO 3	Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
CO 4	Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.
CO 5	Evaluate the ecological and economic value of microbes, thallophytes and bryophytes.

## SYLLABUS

<b>UNIT – I</b>	<p style="text-align: center;"><b>Origin of life and viruses</b></p> <p>Origin of life, concept of primary Abiogenesis; Miller and Urey experiment. Five kingdoms classification of R.H. Whittaker. Discovery of microorganisms, Pasteur experiments, germ theory of diseases. Shape and symmetry of viruses; structure of TMV and Gemini virus; multiplication of TMV, a brief account of Prions and Viroids A general account on symptoms of plant diseases caused by Viruses. Transmission of plant viruses and their control. Significance of viruses in vaccine production, bio-pesticides</p>
<b>UNIT – II</b>	<p style="text-align: center;"><b>Special groups of Bacteria and Eubacteria</b></p> <p>Brief account of Archaeobacteria, Actinomycetes and Cyanobacteria. Cell structure and nutrition of Eubacteria. Reproduction- Asexual (Binary fission and endospores) and bacterial recombination (Conjugation, Transformation, Transduction). Economic importance of Bacteria with reference to their role in Agriculture and industry (fermentation and medicine) A general account on symptoms of plant diseases caused by Bacteria; Citrus canker</p>
<b>UNIT – III</b>	<p style="text-align: center;"><b>Fungi &amp; Lichens</b></p> <p>General characteristics of fungi and Ainsworth classification (upto classes). Structure, reproduction and life history of (a)<i>Rhizopus</i> (Zygomycota) and (b) <i>Puccinia</i> (Basidiomycota). Economic uses of fungi in food industry, pharmacy and agriculture. A general account on symptoms of plant diseases caused by Fungi; Blast of Rice. Lichens- structure and reproduction.</p>
<b>UNIT – IV</b>	<p>General characteristics of Algae (pigments, flagella and reserve food material), Fritsch classification (upto classes). Thallus organization and life cycles in Algae. Occurrence, structure, reproduction and life cycle of a) <i>Spirogyra</i> (Chlorophyceae) and (b) <i>Polysiphonia</i> (Rhodophyceae). Economic importance of Algae</p>
<b>UNIT – V</b>	<p style="text-align: center;"><b>Bryophytes</b></p> <p>5.1. General characteristics of Bryophytes; classification upto classes. 5.2. Occurrence, morphology, anatomy, reproduction (developmental details are not needed) and life cycle of (a) <i>Marchantia</i> (Hepaticopsida) and (b) <i>Funaria</i> (Bryopsida). General account on evolution of sporophytes in Bryophyta</p>

**Text books:**

1. Botany – I (Vrukshasastram-I) : Telugu Akademi, Hyderabad
2. Pandey, B.P. (2013) *College Botany, Volume-I*, S. Chand Publishing, New Delhi

**Books for Reference:**

1. Prescott, L. Harley, J. and Klein, D. (2005) *Microbiology, 6th edition*, Tata McGraw –Hill Co. New Delhi.
2. Alexopoulos, C.J., C.W.Mims&M.Blackwell (2007) *Introductory Mycology*, Wiley& Sons, Inc., New York
3. Fritsch, F.E. (1945) *The Structure & Reproduction of Algae (Vol. I & Vol.II)* Cambridge University Press Cambridge, U.K..

**A .G & S .G. SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYURU**

(An Autonomous college in the jurisdiction of Krishna University)

**MODEL QUESTION PAPER- Theory Examination(s) at Semester end 2021-2022**

**TITLE OF THE PAPER: Fundamentals of Microbes and Non-vascular Plants (Viruses, Bacteria, Fungi, Lichens, Algae and Bryophytes)** Course Code: BOTT11A

Max. Time: 3 Hrs.

Max. Marks: 75 M

**SECTION – A**

**Answer FIVE of the following questions. Draw labelled diagrams wherever necessary. 5 x 5=25M  
ONE question should be given from each Unit in the syllabus.**

1. Five kingdom classification of Whittaker **CO1-L2**
2. Germ theory of diseases **CO1-L2**
3. Which groups of organisms are once considered as algae? Give an account of general characters of that group **CO2- L1**
4. What are the symptoms of citrus canker? Mention the causal organism of citrus canker. **CO2- L2.**
5. Ainsworth classification of fungi **CO-3 L2**
6. Why lichens are considered as unique and composite organisms? **CO-3 L1**  
Why diplobiontic life cycle is called so? Mention an alga that shows diplobiontic life cycle. List out the phases exhibited in one such life cycle studied by you. **CO-4 L1**
8. Vegetative reproduction in Bryophytes. **CO5-L2**

**SECTION – B**

**Answer the following questions.**

**5x10= 50 M**

**Two questions (A & B) are to be given from each Unit in the syllabus (internal choice in each unit). Student has to answer 5 questions by choosing one from a set of questions given from a Unit.**

- 9 a) Give an account of structure and multiplication of TMV? **CO1- L2**  
OR  
b) Explain the significance of viruses in vaccine production, bio-pesticides . **CO1-L2**
10. a) Whether bacteria exhibit sexual reproduction or not ? Elucidate different methods of bacterial recombination. **CO2- L2**  
OR  
b) Explain the role of bacteria in agriculture and industry . **CO2- L2**
- 11 a) Why *Puccinia* is called as macro cyclic rust? Explain the stages of the fungus on Primary host. **CO3-L1.**  
OR  
b) Why lichens are considered as 'pioneers of colonization'? Write about reproduction in Lichens. **CO3-L1**
- 12 a). What is thallus? Describe various types of thalli found in algae. **CO4-L2**  
OR  
b) Explain life cycle of *Spirogyra* . **CO-4 L2**
13. a) Describe morphological and anatomical features of *Marchantia*. **CO5- L2**  
OR  
b) What is the dominant phase in the life cycle of bryophytes?  
Give account on of sporophyte evolution in Bryophytes. **CO5-L 2**

**A .G & S .G. SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYYURU**

(An Autonomous college in the jurisdiction of Krishna University)

**Practical Syllabus**

**SEMESTER- I**

**PAPER- I**

**CREDITS : 02**

<b>BOTANY</b>	<b>BOTT11A</b>	<b>WEF: 2021-2022</b>	<b>B. Sc (BZC), AQUA</b>
---------------	----------------	-----------------------	--------------------------

**Title of the paper: Fundamentals of Microbes and Non-vascular Plants**

**(Viruses, Bacteria, Fungi, Lichens, Algae and Bryophytes)**

**NO OF HOURS: 30**

**Learning outcomes:** On successful completion of this practical course, student shall be able to

- Demonstrate the techniques of use of lab equipment, preparing slides and identify the material and draw diagrams exactly as it appears.
- Observe and identify microbes and lower groups of plants on their own.
- Demonstrate the techniques of inoculation, preparation of media etc.
- Identify the material in the permanent slides etc.

**Practical Syllabus:**

1. Knowledge of Microbiology laboratory practices and safety rules.
2. Knowledge of different equipment for Microbiology laboratory (Spirit lamp, Inoculation loop, Hot-air oven, Autoclave/Pressure cooker, Laminar air flow chamber and Incubator) and their working principles. (In case of the non- availability of the laboratory equipment the students can be taken to the local college/clinical lab. with required infrastructural facilities or they can enter a linkage with the college/lab for future developments and it will fetch credits during the accreditation by NAAC).
3. Demonstration of Gram's staining technique for Bacteria.
4. Study of Viruses (Corona, Gemini and TMV) using electron micrographs/ models.
5. Study of Archaeobacteria and Actinomycetes using permanent slides/ electron micrographs/diagrams.
6. Study of *Anabaena* and *Oscillatoria* using permanent/temporary slides.
7. Study of different bacteria (Cocci, Bacillus, Vibrio and Spirillum) using permanent or temporary slides/ electron micrographs/ diagrams.
8. Study/ microscopic observation of vegetative, sectional/anatomical and reproductive structures of the following using temporary or permanent slides/ specimens/ mounts
  - a. Fungi : *Rhizopus*, *Penicillium* and *Puccinia*.
  - b. Lichens: Crustose, foliose and fruticose



c. Algae : *Volvox*, *Spirogyra*, *Ectocarpus* and *Polysiphonia*

d. Bryophyta : *Marchantia* and *Funaria*

9. Study of specimens of Tobacco mosaic disease, Citrus canker and Blast of Rice.

**Suggested Manuals:**

1. Vasista, B.R. (2018). Botany for degree students - Algae - S. Chand and company Ltd., New Delhi.

2. Dubey, H.C (2018). A text book of Fungi, bacteria and Viruses. Vikas publishing House, New Delhi.

3. Smith, G.M (1955). Cryptogamic Botany (Vol. I Algae, Fungi, & Lichens)

McGraw-Hill Book Co., New York

**A .G & S .G. SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYURU**

(An Autonomous college in the jurisdiction of Krishna University)

**MODEL QUESTION PAPER FOR PRACTICAL EXAMINATION**

Semester – I/ Botany Core Course – 1

**TITLE OF THE PAPER: Fundamentals of Microbes and Non-vascular Plants  
(Viruses, Bacteria, Fungi, Lichens, Algae and Bryophytes)**

Max. Time: 3 Hrs.

Max. Marks: 40

---

1. Take the T.S. of material 'A' (Fungi), make a temporary mount and make comments about identification. 8M
2. Identify any 2 algae from the mixture (material 'B') given with specific comments about identification. 8M
3. Take the T.S. of material 'C' (Bryophyta), make a temporary mount and make comments about identification. 8M
4. Identify the following with specific reasons 4x2=8M
  - A. A laboratory equipment of Microbiology
  - B. B. Virus
  - C. Archaeobacteria /Ascomycete /Cyanobacteria/ Eu-Bacteria
  - D. Lichen
5. Record + Viva-voce 5+3 = 8 M

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru - 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

**Semester: III**

Course Code	<b>BOT301C</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2017-18	Year of Offering: 2021 - 22	Year of Revision:2021 - 22	Percentage of Revision: 50 %

**Learning Objectives:**

On successful completion of this course, the students will be able to:

1. To understand Anatomy of Angiosperms - organization of tissues and tissue systems in plants..
2. To understand the various aspects of embryology.
3. To understand the basic concepts of plant ecology.
4. To understand the various parameters of population and community ecology.
5. To understand the importance of biodiversity

**THEORY: Learning outcomes:**

- On successful completion of this course, the students will be able to;
  - Understand on the organization of tissues and tissue systems in plants.
  - Illustrate and interpret various aspects of embryology.
  - Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
  - Appraise various qualitative and quantitative parameters to study the population and community ecology.
  - Correlate the importance of biodiversity and consequences due to its loss.
  - Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.
-

## SYLLABUS

<b>Unit – 1</b>	<p style="text-align: center;"><b>Anatomy of Angiosperms</b></p> <p>Organization of apical meristems: Tunica-carpus theory and Histogen theory. Tissue systems–Epidermal, ground and vascular. Anomalous secondary growth in <i>Boerhaavia</i> and <i>Dracaena</i>. Study of timbers of economic importance - Teak, Red sanders and Rosewood.</p>
<b>Unit – 2</b>	<p style="text-align: center;"><b>Embryology of Angiosperms</b></p> <p>Structure of anther, anther wall, types of tapetum. Microsporogenesis and development of male gametophyte. Structure of ovule, megasporogenesis; monosporic (<i>Polygonum</i>), bisporic (<i>Allium</i>) and tetrasporic (<i>Peperomia</i>) types of embryo sacs. Outlines of pollination, pollen – pistil interaction and fertilization. Endosperm - Types and biological importance - Free nuclear, cellular, helobial and ruminant. Development of Dicot (<i>Capsella bursa-pastoris</i>) embryo.</p>
<b>Unit – 3</b>	<p style="text-align: center;"><b>Basics of Ecology</b></p> <p>Ecology: definition, branches and significance of ecology. Ecosystem: Concept and components, energy flow, food chain, food web, ecological pyramids. Plants and environment: Climatic (light and temperature), edaphic and biotic factors. Ecological succession: Hydrosere and Xerosere.</p>
<b>Unit – 4</b>	<p style="text-align: center;"><b>Population, Community and Production Ecology</b></p> <p>Population ecology: Natality, mortality, growth curves, ecotypes, ecads Community ecology: Frequency, density, cover, life forms, biological spectrum Concepts of productivity: GPP, NPP and Community Respiration Secondary production, P/R ratio and Ecosystems</p>
<b>Unit – 5</b>	<p style="text-align: center;"><b>Basics of Biodiversity</b></p> <p>Biodiversity: Basic concepts, Convention on Biodiversity - Earth Summit. Value of Biodiversity; types and levels of biodiversity and Threats to biodiversity Biodiversity Hot spots in India. Biodiversity in North Eastern Himalayas and Western Ghats. Principles of conservation: IUCN threat-categories, RED data book Role of NBPGR and NBA in the conservation of Biodiversity.</p>

**Text books:**

1. Botany – III (Vrukshasastram-I) : Telugu Akademi, Hyderabad
2. Botany – IV (Vrukshasastram-II) : Telugu Akademi, Hyderabad
3. Pandey, B.P. (2013) *College Botany, Volume-II*, S. Chand Publishing, New Delhi

**Books for Reference:**

- Esau, K. (1971) *Anatomy of Seed Plants*. John Wiley and Son, USA.
- Paula Rudall (1987) *Anatomy of Flowering Plants: An Introduction to Structure and Development*. Cambridge University Press, London
- Bhojwani, S. S. and S. P. Bhatnagar (2000) *The Embryology of Angiosperms (4<sup>th</sup> Ed.)*, Vikas Publishing House, Delhi.

**A.G & S.G. Siddhartha Degree College of Arts & Science**

An autonomous college in the jurisdiction of Krishna University

BOTANY	BOT- 301C	w.e.f. 2021-22	B. Sc. (BZC), AQUA
--------	-----------	----------------	--------------------

**II B. Sc – BOTANY**

**Model Question Paper**

**SEMESTER- III**

**PAPER-III: Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

**Time: 3 Hours**

**Max. Marks: 70**

---

**SECTION-A**

Answer any **four** of the following questions.

**4x 5 = 20Marks**

(Draw diagrams wherever necessary)

1. Histogen theory.
2. Rosewood.
3. Ruminant endosperm
4. Energy flow
5. Significance of ecology.
6. Natality
7. GPP.
8. NBPGR

**SECTION-B**

Answer any **five** of the following questions.

**5x10 = 50Marks**

(Draw diagrams wherever necessary)

9. Explain about Organization of apical meristems:
10. Describe the Anomalous secondary growth in *Boerhaavia*?
11. Write an essay on ICBN.
12. Describe vegetative & floral characters of Asclepiadaceae.
13. Write an essay on ecological pyramids?
14. What is Ecological succession: Write an essay on Hydrosere?
15. Write the characteristics of population ecology?
16. Give an account of Value of Biodiversity?

**Guide lines for paper setter:** (for Paper III – BOT- 301) w.e.f 2021-22

1. In **section A**: Unit II, V must carry **one** question, Unit I,III & IV must carry **two** questions.
2. In **section- B**: Set minimum **two** questions from Unit I, II, III . **One** question each from Unit IV and Unit V.
3. See the following table and Model paper for marks distribution.
4. Please provide the scheme of valuation for the paper.
5. Question paper should be both in English and Telugu media.

Unit	Section - A		Section - B		Weightage in
	Questions	Marks	Questions	Marks	Marks
Unit – I	2		2		
	10		20		30
Unit - II	1		2		
	05		20		25
Unit – III	2		2		
	10		20		30
Unit – IV	2		1		
	10		10		20
Unit – V	1		1		
	05		10		15
Max. Q & marks	8	(x 5) = 40	8	(x 10) = 80	(Total questions =16) Total marks = 120
Max. Q and marks for Valuation	Questions	Marks	Questions	Marks	Max. marks
	4	(4 X 5M) = 20 M	5	(5 X 10M)= 50 M	70M

**INTERNAL EXAMS - 30Marks**

**(20 marks** for unit tests, 5marks for Attendance **5** marks for seminars)

## Practical syllabus of Botany Core Course – 3 /Semester – III

### Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity

(Total hours of laboratory exercises 30 Hrs. @ 02 Hrs./Week)

#### Course Outcomes:

On successful completion of this practical course students shall be able to:

1. Get familiarized with techniques of section making, staining and microscopic study of vegetative, anatomical and reproductive structure of plants.
2. Observe externally and under microscope, identify and draw exact diagrams of the material in the lab.
3. Demonstrate application of methods in plant ecology and conservation of biodiversity and qualitative and quantitative aspects related to populations and communities of plants.

#### Practical Syllabus

1. Tissue organization in root and shoot apices using permanent slides.
2. Anomalous secondary growth in stems of *Boerhavia* and *Dracaena*.
3. Study of anther and ovule using permanent slides/photographs.
4. Study of pollen germination and pollen viability.
5. Dissection and observation of Embryo sac haustoria in *Santalum* or *Argemone*.
6. Structure of endosperm (nuclear and cellular) using permanent slides / Photographs.
7. Dissection and observation of Endosperm haustoria in *Crotalaria* or *Coccinia*.
8. Developmental stages of dicot and monocot embryos using permanent slides / photographs.
9. Study of instruments used to measure microclimatic variables; soil thermometer, maximum and minimum thermometer, anemometer, rain gauge, and lux meter. (visit to the nearest/local meteorology station where the data is being collected regularly and record the field visit summary for the submission in the practical).
10. Study of morphological and anatomical adaptations of hydrophytes and xerophytes (02 each).
11. Quantitative analysis of herbaceous vegetation in the college campus for frequency, density and abundance.
12. Identification of vegetation/various plants in college campus and comparison with Raunkiaer's frequency distribution law.
13. Find out the alpha-diversity of plants in the area.
14. Mapping of biodiversity hotspots of the world and India



**Model paper for Practical Examination**

Semester – III/ Botany Core Course – 3

**Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

Max. Time: 3 Hrs.

Max. Marks: 50

---

1. Take T.S. of the material 'A' (Anatomy), prepare a temporary slide and justify the identification with specific reasons. 7M
2. Write the procedure for the experiment 'B' (Embryology) and demonstrate the same. 6M
3. Take T.S. of the material 'C', prepare a temporary slide and justify the identification with specific reasons. 4M
4. Identify the following with specific reasons. 4 x 2 = 8 M  
D. Anatomy/Embryology  
E. Ecology instrument  
F. Mapping of Biodiversity hot spot  
G. Endemic/endangered plant/animal

Total Marks: 25

**Internals:**

1. Record ..... 10M
2. Viva-voce .....3M
3. Field trip .....4M
4. Internal practical exam ..... 8M

Total Marks:25

**Total marks: 50**

**Suggested co-curricular activities for Botany Core Course-3 in Semester-III:**

**A. Measurable :**

**a. Student seminars :**

1. Anatomy in relation to taxonomy of Angiosperms.
2. Nodal anatomy
3. Floral anatomy
4. Embryology in relation to taxonomy of Angiosperms.
5. Apomictics and polyembryony.
6. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.
7. Deforestation and Afforestation.
8. Green house effect and ocean acidification.
9. The Montreal protocol and the Kyoto protocol.
10. Productivity of aquatic ecosystems.
11. Mangrove ecosystems in India.
12. Kollerulake – Ramsar site.
13. Biodiversity hotspots of the world.
14. Origin of Crop plants - Vavilov centers
15. Agrobiodiversity
16. International organizations working on conservation of Biodiversity
17. Nagoya protocol – ABS system.
18. Endemic and endangered plants in Andhra Pradesh.

**b. Student Study Projects :**

1. Stomata structure in plants from college campus/ their native place.
2. Report on xylem elements in plants using maceration technique.
3. Collection of information on famous herbaria in the world and preparation of a report.
4. Microscopic observations on pollen morphology from plants in college Campus/ their native locality.
5. Study report on germination and viability of pollen in different plants.
6. Observation of anthesis time in different plants and their pollinators.
7. A report on autecology and synecology of some plants in college campus or their native place.
8. Collection of photos of endemic/endangered plant and animal species to Make an album.

9. Biodiversity of the college or their own residential/ native area.
10. Collection of seeds/vegetative organs of rare plant species from their localities and to raise/grow in college garden

**C .Assignments:** Written assignment at home / during 'O' hour at college; preparation of charts with drawings, making models etc., on topics included in syllabus.

**B. General :**

1. Visit to an arboretum/silviculture station/Forest research institute to see the live timber yielding plants or to visit a local timber depot. to observe various woods.
2. Field visit to a nearby ecosystem to observe the abiotic-biotic relationships.
3. Visit to National park/Sanctuary/Biosphere reserve etc., to observe in-situ conservation of plants and animals.
4. Visit to a Botanical garden or Zoo to learn about ex-situ conservation of rare plants or animals.
5. Group Discussion (GD)/ Quiz/ Just A Minute (JAM) on different modules in syllabus of the course.

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru - 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: Cell Biology, Genetics and Plant Breeding**

**Semester : V**

Course Code	<b>BOT-501</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2017-18	Year of Offering: 2017 - 18 2021-22	Year of Revision:2021 - 22 2021-22	Percentage of Revision: 50 %

**Learning Objectives:**

On successful completion of this course, the students will be able to:

1. To understand the Cell, Structure and functions
2. To understand the Genetic Material
3. To understand the basic concepts of plant ecology.
4. To understand the various parameters of population and community ecology.
5. To understand the importance of biodiversity

## SYLLABUS

<b>UNIT-I</b>	<b>Cell Biology</b> Cell, Ultra Structure and functions of cell wall. Molecular Organization of cell membranes. Chromosomes; morphology, organization of DNA in a chromosome (Nucleosome model) Euchromatin and Heterochromatin.
<b>UNIT-II</b>	<b>Genetic Material</b> DNA as the Genetic Material: Griffith's and Avery's Transformation Experiment. Hershey - Chase Bacteriophage experiment. DNA Structure (Watson & crick model) and replication of DNA (SemiConservative). Types of RNA (mRNA, tRNA, rRNA), their structure and function.
<b>UNIT- III</b>	<b>Mendelian Inheritance</b> Mendelian Inheritance (Mono – Di-hybrid Crosses), Back cross and Text cross. Linkage: concept, complete and In-complete Linkage, Coupling and Repulsion; Linkage Maps Based on Two and Three Point cross. Crossing over concept and significance.
<b>UNIT-IV</b>	<b>Gene Expression</b> Organization of gene, Transcription and Translation. Mechanism and regulation of Gene Expression in Prokaryotes (Lac operon). Mutations: Chromosomal Aberrations, Gene Mutations and Transposable Elements
<b>UNIT-V</b>	<b>Plant Breeding</b> Introduction and objectives of Plant Breeding. Methods of Crop Improvement: Procedure, Advantages and limitations of Introduction, Selection and Hybridization (Out lines only).

**B.Sc – BOTANY**  
**SEMESTER -V. THEORY MODEL PAPER**

**Time: 3 Hours**

**Max. Marks: 70**

---

**SECTION-A**

**Answer any FOUR of the following question**  
(Draw diagrams wherever necessary)

**4 x 5=20M.**

1. Nucleosome
2. Griffith experiment.
3. t RNA
4. Back cross and test cross.
5. Transcription.
6. Three point test cross.
7. Hybridization.
8. Crossing over.

**SECTION-B**

**Answer any FIVE of the following questions.**  
(Draw diagrams wherever necessary)

**5 x 10 = 50M.**

9. Describe the Ultra structure and functions of cell membrane.
10. What is cell theory? Write about eukaryotic cell components.
11. Write about structure and replication of DNA.
12. DNA as a genetic material proof with suitable experiments.
13. Explain the Mendel's law of inheritance.
14. Define linkage. Describe the different types of Linkage.
15. Write an essay on mechanism and Regulation of gene Expression in Prokaryotes.
16. Discuss about methods of Crop improvement.

**Guide lines for paper setter:** (for Paper V-BOT-501) W.e.f. 2021-22

1. In Section A: Unit I, III, V must carry one question from each unit. Unit II must carry 2 questions and Unit IV must carry three questions.
2. In section-B: Set minimum Two questions from Unit I, II & III
3. See the following table and Model paper.
4. Please provide the scheme of valuation for the paper.
5. Question paper should be both in English and Telugu media.

Unit	Section - A		Section - B		Weightage in Marks
	Questions	Marks	Questions	Marks	
Unit – I	1		2		
		5	20		25
Unit – II	2		2		
		10	20		30
Unit –III	1		2		
		5		20	25
Unit-IV	3		1		
		15		10	25
Unit-V	1		1		
		5		10	15
Max .Q & marks	8	( x 5 ) =40	8	( x 10 ) = 80	(Total questions =16) Marks 120
Max. Q and marks for Valuation	Questions	Marks	Questions	Marks	Max. marks
	4		5		
		(4 x 5 ) = 20		(5 x 10 ) = 50	70

**INTERNAL EXAMS - 30Marks**

(20 marks for unit tests, 5marks for Attendance 5 marks for seminars)

**III B.SC-BOTANY Practical paper**  
**Cell Biology, Genetics and Plant Breeding**

**SEMESTER-V**

**BOT-501-P**

**Time: 3hr**

Total hours of teaching 30hrs @ 2 hrs per week

**Max.marks:50**

---

1. Study of the structure of cell organelles through photomicrographs.
2. Study of plant cell through temporary mounts.
3. Study of various stages of mitosis using cytological preparation of Onion root tips.
4. Study of DNA packing by micrographs.
5. Numerical problems solving Mendal's Laws of inheritance.
6. Chromosome mapping using 3 point test cross data.
7. Hybridization techniques –emasculation. Bagging (for demonstration only).
8. Field visit to a plant breeding research station.

**III B.SC-SEMESTER-V, BOTANY PRACTICAL MODEL PAPER**

**PAPER –V: CELL BIOLOGY GENETICS AND PLANT BREEDING**

1. Perform the Experiment A Squash technique.....12M
2. Give the experimental protocol of the experiments. B.....04M
3. Solving numerical problems on Mendelian inheritance....C, D.....2x7½=15M
4. Record.....05M
- Viva.....04M
- Internal Practical Exam.....10M



### III B.SC-BOTANY Syllabus SEMESTER-V

#### Practical paper – V: Cell Biology, Genetics and Plant Breeding

Total hours of teaching 30hrs @ 2 hrs per week

1. Perform the Experiment A.

Squash technique .....	4M
Procedure.....	4M
diagram .....	2M =10

2. Give the experimental protocol of the experiments. B.....4M

3. Genetic problem C, D

Salvation of problem.....	5M
Reasoning.....	2 <sup>1</sup> / <sub>2</sub> M
	2X7 <sup>1</sup> / <sub>2</sub> =15M

Viva .....	4M
------------	----

**Internal:**

a) Record.....	5 M.
b)Internal Practical Exam.....	10M

**Books for Reference:**

1. Old, R.W. and Primrose S.B. 1994, Principles of Gene Manipulation Blackwell Science,19 London 2. Grierson, D. and Convey S.N. 1989, Plant Molecular Biology, Blackie Publishers, NewYork.
2. Lea, P.J. and Leegood R.C. 1999, Plant Biochemistry and Molecular Biology, John Wiley and Sons, London.
3. Power C.B., 1984, Cell Biology, Himalaya Publishing Co. Mumbai
4. De. Robertis and De Robertis, 1998, Cell and Moleceular Biology, K.M. Verghese andCompany .

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru - 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: PLANT ECOLOGY & PHYTOGEOGRAPHY**

**Semester : V**

Course Code	<b>BOT-502</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2017-18	Year of Offering: 2017 - 18 2021-22	Year of Revision:2021 - 22 2021-22	Percentage of Revision: 50 %

**Learning Objectives:**

On successful completion of this course, the students will be able to:

1. To understand the elements of ecology.
2. To understand the ecosystem
3. To understand the basic concepts of plant ecology.
4. To understand the various parameters of population and community ecology.
5. To understand the importance of biodiversity

## SYLLABUS

<b>UNIT-I</b>	<b>ELEMENTS OF ECOLOGY</b>  Ecology: Definition, branches and significance of ecology. Claimatic factors: Light, Temperature. Edaphic factor: Origin, formation, composition and soil profile. Biotic factor, Ecological adaptations of Plants.
<b>Unit- II</b>	<b>Ecosystem Ecology</b> Ecosystem: concept and components, energy flow, food chain, food web, Ecological Pyramids. Productivity of ecosystem-Primary, Secondary and Net productivity. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.
<b>Unit – III</b>	<b>Population &amp; Community ecology</b> Population- defination, characteristics and importance (Density, Natality, Mortality, Growth Curves) outlines- ecotypes. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, Biological Spectrum. Ecological Succession: Hydrosere and Xerosere.
<b>Unit-IV</b>	<b>Phytogeography</b>  Principles of Phytogeography, Distribution (Wides, Endemic, Discontinuous species). Phytogeography regions of India. Endemism – types and Causes.
<b>Unit-V</b>	<b>Plant Biodiversity and its Importance</b>  Definition, Levels of Biodiversity – genetic, species and ecosystem. Biodiversity and Hot-spots of India: North Eastern, Himalayas and Western Ghats. Loss of Biodiversity-causes and Conservation (In-situ and Ex-Situ Methods).

**B.Sc – BOTANY**  
**SEMESTER –VI THEORY MODEL PAPER**  
**PLANT ECOLOGY & PHYTOGEOGRAPHY**

**Time: 3 Hours**

**Max. Marks: 70**

---

**SECTION-A**

**Answer any FOUR of the following question.**

**4 x 5= 20M.**

(Draw diagrams wherever necessary)

1. Soil profile.
2. Biotic factor.
3. Food web.
4. Energy Flow in Ecosystem.
5. Natality.
6. Biological Spectrum
7. Endemism.
8. Red-Data book.

**SECTION-B**

**Answer any Five of the following questions.**

**5 x 10 = 50M.**

(Draw diagrams wherever necessary)

9. Discusses the importance of Temperature Factor on Plant Growth.
10. Briefly Discuss the Ecological Adaptations of Xerophytes.
11. What are Ecological Pyramids? Describe the Pyramids of numbers, Biomass and Energy.
12. What are biogeochemical cycles? Give an account of Nitrogen cycle?
13. What is Plant Succession? Describe Hydrosere?
14. What are the Characters of Plant Communities?
15. What are Principles of Plant Phytogeography?
16. What is Biodiversity? Explain the Levels of Biodiversity.

**Guide lines for paper setter:** (for Paper V-BOT-502) W.e.f. 2021-22

1. In Section A: Unit I, II, III, must carry Two question from each unit. Unit IV, V must carry one question.
2. In section-B: Set minimum two questions from Unit I, II & III and Set One Question from IV, V.
3. See the following table and Model paper.
4. Please provide the scheme of valuation for the paper.
5. Question paper should be both in English and Telugu media.

Unit	Section – A		Section - B		Weightage in
	Questions	Marks	Questions	Marks	Marks
Unit – I	2		2		
		10		20	30
Unit – II	2		2		
		10		20	30
Unit – III	2		2		
		10		20	30
Unit-IV	1		1		
		5		10	15
Unit-V	1		1		
		5		10	15
Max. Q & marks	8	( x 5 ) = 40	8	( x 10 ) = 80	(Total questions = 16) Marks 120
Max. Q and marks for Valuation	Questions	Marks	Questions	Mark s	Max. marks
	4		5		
		(4 x 5 ) = 20		(5 x 10 ) = 50	70

**INTERNAL EXAMS – 30 Marks**

(20 marks for unit tests, 5 marks for assignments and remaining 5 marks for seminar etc.)

**BOTANY PRACTICAL  
PLANT ECOLOGY & PHYTOGEOGRAPHY**

SEMESTER- V

BOT-502-P

Total hours of teaching 30 hrs @ 3 hrs per week

---

---

1. Study of instruments used to measure microclimatic variables; soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, rain gauge, and lux meter.
2. Permeability (percolation; total capacity as well as rate of movement) of different soil samples.
3. Determination of soil pH
4. Study of morphological and anatomical adaptations of hydrophytes and xerophytes. (4each)
5. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method.
6. Study of Phytoplankton and macrophytes from water bodies.
7. Study of species diversity index of vegetation.
8. Estimation of Primary Productivity of an ecosystem.
9. To study field vegetation with respect to stratification, canopy cover and composition.
10. Study of plants included in agro forestry and social forestry.
11. To locate the hotspots, phyto geographical regions and distribution of endemic plants in the map of India.
12. The following practical should be conducted in the Field/lab with the help of Photographs, herbarium, Floras, Red data book- Study of endangered plants species, critically endangered plants species, vulnerable plant species and monotypic endemic genera of India.

**BOTANY PRACTICAL  
PLANT ECOLOGY & PHYTOGEOGRAPHY**

SEMESTER- V

BOT-502-P

Total hours of teaching 30 hrs @ 3 hrs per week

---

---

1. Study Project under supervision.....12 Marks
2. Experiment A ..... 07Marks
3. Anatomical adaptations of **B** (Section cutting)..... 07Marks
4. Spotters **C&D** .....(2x2 1/2) = 5 Marks
5. Record.....05Marks
6. Viva-Voc.....04Mrks
7. Internal practical exam.....10Marks

**Total = 50 Marks**

**BOTANY PRACTICAL  
PLANT ECOLOGY & PHYTOGEOGRAPHY**

SEMESTER- V

BOT-502-P

Scheme of Valuation

1. Study Project under supervision  
To study Honey Bees and Plants Yielding Honey ..... 12 Marks
2. Experiment A -determination of soil porosity/PH..... 07Marks
3. Anatomical adaptations of **B** (Section cutting)  
Xerophytes / Hydrophytes .....07Marks
4. Spotters **C&D** anemometer/rain gauze/lux meter ..... (2x2 1/2) = 5 Marks
5. Viva-Voc.....04Mrks
6. Record..... 05Marks
7. Internal practical exam..... 10Marks

**Total = 50 Marks**

**Books for Reference:**

1. Daubenmire, R.F. ( ): Plants & Environment (2nd Edn.) John Wiley & Sons.,  
New York22
2. Puri, .G.S. (1960): Indian Forest Ecology (Vol.I & II) Oxford Book Co., New Delhi  
&Calcutta.
3. Billings, W.B. (1965): Plants and the Ecosystem Wadsworth Publishing Co., Inc.,  
Belmont.
4. Misra, R. (1968): The Ecology work Book Oxford & INH Publishing Co., Calcutta



**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF CHEMISTRY**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**03-11-2021**

Minutes of the Meeting of Board of Studies in Chemistry for the Autonomous Course

A.G. & S.G. Siddhartha Degree College of Arts & Science, Vuyyuru Held at 11.00 A.M on 03-11-2021 in  
the Department of Chemistry.

*K.RAMESH* Presiding

Members Present:

- 1) *K. Ramesh* ..... Chairman HOD, Dept. of Chemistry,  
(Sri. K.RAMESH) A.G. & S.G.S.Degree College, Vuyyuru.
- 2) *D. Ramasekhara Reddy* ..... University Nominee Assistant Professor,  
(Prof.D.Ramasekhar Reddy) Dept. of Chemistry, Krishna University, MTM.
- 3) *S. Kalpana* ..... Academic Council Nominee HOD, Dept. of Chemistry,  
(Dr. S. Kalpana) SDMS M College, Vijayawada.
- 4) *A. Indira* ..... Academic Council Nominee Lecturer in Chemistry,  
(Smt. A. Indira) G.D.C, Dumpagadapa
- 5) *G. Raja* ..... Industrialist Manager, Q.A, Biophore india  
(Dr. G Raja) Pharmaceuticals pvt ltd Hyd,
- 6) *M. Sowjanya* ..... Student Nominee Lecturer in Chemistry,  
(Smt. M. Sowjanya) ANR College Gudivada.
- 7) *G. Giri Prasad* ..... Member Lecturer in Chemistry,  
(Dr. G.Giri prasad) A.G. & S.G.S.Degree College, Vuyyuru
- 8) *M. V. Santhi* ..... Member Lecturer in Chemistry,  
(Smt. M.V.Santhi) A.G. & S.G.S.Degree College, Vuyyuru.
- 9) *P. Suresh* ..... Member Lecturer in Chemistry,  
(Sri. P.Suresh) A.G.& S.G.S.Degree College, Vuyyuru.
- 10) *M. Santhi* ..... Member Lecturer in Chemistry,  
(MS. M.Santhi) A.G.& S.G.S.Degree College, Vuyyuru:
- 11) *J. Nageswara Rao* ..... Member Rtd.Lecturer in Chemistry,  
(Sri. J.Nageswara Rao) A.G.& S.G.S.Degree College, Vuyyuru.

## Agenda for B.O.S Meeting

1. To recommend the syllabus and model paper for I semester of I Degree B.Sc., Chemistry for the Academic year 2021-2022.
2. To recommend the syllabus and model papers for III semester of II Degree B.Sc., Chemistry for the Academic year 2021-2022.
3. To recommend the syllabus and model papers for V semester of III Degree B.Sc. Chemistry for the Academic year 2021-2022.
4. To recommend the Blue print of I, III, V semesters of B.Sc. Chemistry for the Academic year 2021--2022.
5. To recommend the Guidelines to be followed by the question paper setters in Chemistry for I, III, V Semester-end exams.
6. To recommend the teaching and evaluation methods to be followed under Autonomous status.
7. Any suggestions regarding certificate course, seminars, workshops, Guest lecture to be organized.
8. Recommend the panel of paper setters and Examiners to the controller of Examinations of autonomous Courses of A.G. & S.G.S. Degree colleges of Arts & Science, Vuyyuru.
9. Any other matter.

*K. Ramell*  
Chairman.

## RESOLUTIONS

- 1) It is resolved to Change the **syllabus of academic year 2020-2021 for I semesters of I B.Sc.** under Choice Based Credit System (CBCS) for the Academic year 2021–2022.
  - **Adding Syllabus:** P-block elements in unit-1, Dilute Solutions.
  - **Deleting Syllabus:** Inorganic Polymers and Collegative Properties.
- 2) It is resolved to implement the changed **syllabus and model papers** under Choice Based Credit System (CBCS) from this Academic year onwards for **III semester of II B.Sc** for the Academic year 2021-2022.
  - It is resolved to implement the new paper with title Organic chemistry and Spectroscopy with paper code CHE-301.
- 3) It is resolved to implement the same **syllabus (theory and practical)** under Choice Based Credit System for the Academic year 2021-2022 for **V semester of III B.Sc.**
- 4) It is resolved to follow the **Blue prints** as proposed by members of BOS I, III & V semester of Degree B.Sc. for the Academic year 2021-2022.
- 5) It is resolved to follow the guidelines to be followed by the question paper setters of Chemistry for I, III & V semesters of Degree B.Sc. for the Academic Year 2021-2022.
- 6) It is resolved to continue the following teaching and evaluation methods for Academic year 2021-22.

### Teaching Methods:

Besides the conventional methods of teaching, we use modern technology i.e. using of LCD projector to display on U boards etc, for better understanding of concepts.

### Evaluation of a student is done by the following procedure:

#### • Internal Assessment Examinations:

- Out of maximum 100 marks in each paper for I B.Sc, 25 marks shall be allocated for internal assessment. Out of these 25 marks, 15 marks are allocated for announced tests (i.e. IA-1 & IA-2).
- Out of maximum 100 marks in each paper for II, III B.Sc, 30 marks shall be allocated for internal assessment. Out of these 30 marks, **20 marks are allocated for announced tests (i.e. IA-1 & IA-2).**
- Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, **5 marks are allocated on the basis of candidate's percentage of attendance and remaining 5 marks are allocated for the innovative component like assignment/quiz/seminars for I, II, III B.Sc.**
- There is **no pass minimum** for internal assessment for I, II, III B.Sc.

#### Semester – End Examination:

- The maximum marks for I B.Sc Semester – End examination shall be 75 marks and 70 marks for II, III B.Sc., duration of the examination shall be 3 hours. Even though the candidate is absent for two IA exams / obtain Zero marks the external marks are considered (if the candidate gets 40/70) and the result shall be declared as "PASS".
- Semester – End examinations shall be conducted in theory papers at the end of every semester, while in practical papers, these examinations are conducted at the end of I, III, & V semesters for I, II & III B.Sc for 50 marks.
- Discussed and recommended for organizing **certificate course, seminars, Guest lecturers, workshops** to upgrade the knowledge of students, for the approval of the academic council.
- Discussed and empowered the Head of the department of Chemistry to suggest the panel of paper setters and examiners to the controller of examinations. **Department of Chemistry Adopted Value Added Course "Water Analysis".**
- NIL.

*K. Ramell*  
Chairman

**A.G.&S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.  
(Accredited at "A" Grade by NAAC, Bangalore)**

<b>SEMESTER – I</b>	<b>SUBJECT: CHEMISTRY</b>	<b>COURSE CODE:</b>
<b>PAPER TITLE : INORGANIC &amp;PHYSICAL CHEMISTRY, PAPER-I</b>		
<b>ACADEMIC YEAR-2021-2022</b>		

**60 hrs(4h/w)**

**Credits-3**

**COURSE OUTCOMES:**

At the end of the course, the student will be able to;

1. Understand the basic concepts of p-block elements.
2. Explain the difference between solid, liquid and gases in terms of inter molecular interactions.
3. Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses.

**INORGANIC CHEMISTRY**

**24h**

**UNIT – I**

**1. Chemistry of p-block elements**

**8h**

**Group 13:** Preparation & structure of Diborane, Borazine

**Group 14:** Preparation, classification and uses of silicones

**Group 15:** Preparation & structures of Phosphonitrilic halides  $\{(PNCI_2)_n\}$  where  $n=3, 4$

**Group 16:** Oxides and Oxoacids of Sulphur (structures only)

**Group 17:** Pseudo halogens, Structures of Interhalogen compounds.

**UNIT-II**

**1. Chemistry of d-block elements:**

**6h**

Characteristics of d-block elements with special reference to electronic configuration, variable valence, magnetic properties, catalytic properties and ability to form complexes. Stability of various oxidation states.

**2. Chemistry of f-block elements: 6h**

Chemistry of lanthanides - electronic structure, oxidation states, lanthanide contraction, consequences of lanthanide contraction, magnetic properties. Chemistry of actinides - electronic configuration, oxidation states, actinide contraction, comparison of lanthanides and actinides.

**3. Theories of bonding in metals: 4h**

Valence bond theory and free electron theory, explanation of thermal and electrical conductivity of metals based on these theories, Band theory- formation of bands, explanation of conductors, semiconductors and insulators.

**PHYSICAL CHEMISTRY 36h**

**UNIT-III**

**Solid state 10h**

Symmetry in crystals. Law of constancy of interfacial angles. The law of rationality of indices. The law of symmetry. Miller indices, Definition of lattice point, space lattice, unit cell. Bravais lattices and crystal systems. X-ray diffraction and crystal structure. Bragg's law. Powder method. Defects in crystals. Stoichiometric and non-stoichiometric defects.

**UNIT-IV**

**1. Gaseous state 6h**

Van der Waal's equation of state. Andrew's isotherms of carbon dioxide, continuity of state. Critical phenomena. Relationship between critical constants and vander Waal's constants. Law of corresponding states. Joule- Thomson effect. Inversion temperature.

**2. Liquid state 4h**

Liquid crystals, mesomorphic state. Differences between liquid crystal and solid/liquid. Classification of liquid crystals into Smectic and Nematic. Application of liquid crystals as LCD devices.

**UNIT-V**

**Solutions, Ionic equilibrium & dilute solutions**

**1. Solutions 6h**

Azeotropes-HCl-H<sub>2</sub>O system and ethanol-water system. Partially miscible liquids-phenol-water system. Critical solution temperature (CST), Effect of impurity on consolute temperature. Immiscible liquids and steam distillation. Nernst distribution law. Calculation of the partition coefficient. Applications of distribution law.

## **2. Ionic equilibrium**

**3h**

Ionic product, common ion effect, solubility and solubility product. Calculations based on solubility product.

## **3. Dilute solutions**

**7h**

Colligative properties- RLVP, Osmotic pressure, Elevation in boiling point and depression in freezing point. Experimental methods for the determination of molar mass of a non-volatile. Solute using osmotic pressure, Elevation in boiling point and depression in freezing point. Abnormal colligative properties. Van't Hoff factor.

### **Co-curricular activities and Assessment Methods**

1. Continuous Evaluation: Monitoring the progress of student's learning.
2. Class Tests, Work sheets and Quizzes.
3. Presentations, Projects and Assignments and Group Discussions: Enhances critical thinking skills and personality.
4. Semester end Examination: critical indicator of student's learning and teaching methods adopted by teachers throughout the semester.

### **List of Reference Books**

1. Principles of physical chemistry by Prutton and Marron
2. Solid State Chemistry and its applications by Anthony R. West
3. Text book of physical chemistry by K L Kapoor
4. Text book of physical chemistry by S Glasstone
5. Advanced physical chemistry by Bahl and Tuli
6. Inorganic Chemistry by J.E.Huheey
7. Basic Inorganic Chemistry by Cotton and Wilkinson
8. A textbook of qualitative inorganic analysis by A.I. Vogel
9. Atkins, P. W. & Paula, J. de Atkin's Physical Chemistry Ed., Oxford University Press 10th Ed (2014).
10. Castellan, G. W. Physical Chemistry 4th Ed. Narosa (2004).
11. Mortimer, R. G. Physical Chemistry 3rd Ed. Elsevier: NOIDA, UP (2009).
12. Barrow, G. M. Physical Chemis

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.**

<b>SEMESTER-I</b>	<b>PAPER-I</b>	<b>PAPER CODE : CHE-101C</b>
<b>PAPER TITLE : INORGANIC &amp; PHYSICAL CHEMISTRY</b>		
<b>ACADEMIC YEAR-2021-2022</b>		

**Time: 3Hours**

**Maximum marks: 75**

**Pass marks:**

**Time: 3 Hours**

**Max. Marks: 75M**

**PART- A**

**Answer any FIVE of the following questions. Each carries FIVE marks 5 X 5 = 25 Marks**

1. Explain the preparation & structures of Phosphonitrilic compounds. **L2- CO1**
2. Explain in brief, catalytic properties & stability of various oxidation states of d- block elements.  
**L2-CO2**
3. Define Unit Cell , Space Lattice and Lattice Point. **L1- CO3**
4. What are Smectic & Nematic liquid Crystals? Explain. **L1- CO4**
5. Write account on Common ion effect & Solubility product. **L2- CO5**
6. Write a short note on Law of Corresponding States. **L1- CO4**
7. Explain Actinide Contraction. **L2- CO2**
8. Explain the structure of Borazine. **L2- CO1**

**PART-B**

**Answer All of the following questions. Each carries TEN marks**

**5 X 10 = 50 Marks**

9. (a). Explain Classification, Preparations & uses of Silicones **L2- CO1**

(or)

(b). (i). What are Pseudohalogens. **L2- CO1**

(ii). Explain the Structures of any one  $AX_3$  &  $AX_5$  interhalogen compounds. **L2- CO1**

10. (a). What is Lanthanide Contraction? Explain the Consequences of Lanthanide Contraction.

**L2- CO2**

(or)

(b). (i). Explain the magnetic properties of d- block elements. **L2- CO2**

(ii). Explain about Conductors, Semi-Conductors & Insulators using Band Theory. **L2- CO2**



11. (a). Write an essay on Crystal defects. **L1- CO3**

(or)

(b). what is Bragg's Law. Explain the determination of structure of a crystal by powder method.

**L2- CO3**

12. (a). Derive the relationship between Critical constants & Vander Waal's constants **L1- CO4**.

(or)

(b). (i). Write any 5 differences between liquid crystals & liquids, solids

(ii). Write the applications of Liquid crystals. **L2- CO4**

13. (a). Explain Nernst distribution Law. Explain its applications. **L2- CO5**

(or)

(b). What are colligative properties. Write experimental methods for determination of molar mass of a non-volatile solute by using Elevation in boiling point & depression in freezing point. **L2- CO5**

**A.G.&S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.  
(Accredited at "A" Grade by NAAC, Bangalore)  
PRACTICAL SYLLABUS**

<b>Practical Paper – I Analysis of SALTMIXTURE</b>	<b>PAPER CODE : CHE-101 P ACADEMIC YEAR-2021-2022</b>
--	---

**LABORATORY COURSE -I**

**30hrs (2 h / w)**

**Practical-I**

**(At end of Semester-I)**

**Qualitative inorganic analysis (Minimum of Six mixtures should be analysed)**

**Course outcomes:**

At the end of the course, the student will be able to;

1. Understand the basic concepts of qualitative analysis of inorganic mixture.
2. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory.
3. Apply the concepts of common ion effect, solubility product and concepts related to qualitative analysis.

**Analysis of SALT MIXTURE**

**50 M**

Analysis of mixture salt containing two anions and two cations (From two different groups) from the following:

**Anions:** Carbonate, Sulphate, Chloride, Bromide, Acetate, Nitrate, Borate, Phosphate.

**Cations:** Lead, Copper, Iron, Aluminium, Zinc, Nickel, Manganese, Calcium, Strontium, Barium, Potassium and Ammonium.

**A.G.&S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.  
(Accredited at "A" Grade by NAAC, Bangalore)**

<b>SEMESTER – III</b>	<b>SUBJECT: CHEMISTRY</b>	<b>COURSE CODE: CHE-</b>
	<b>301C</b>	
<b>PAPER TITLE : ORGANIC CHEMISTRY &amp; SPECTROSCOPY, PAPER-III</b>		
<b>ACADEMIC YEAR-2021-2022</b>		

**60 hrs(4h/w)**

**Credits-3**

**ORGANIC CHEMISTRY**

**UNIT – I**

**1. Chemistry of Halogenated Hydrocarbons: 6h**

Nomenclature, any two preparations of Alkyl halides, Aryl halides,

**Chemical properties**

**Marks Weightage-5**

a. Williamson's synthesis b. substitution vs elimination.

c. Relative reactivity of alkyl, allyl, vinyl, benzyl and aryl halides towards nucleophilic substitution reactions.

**Mechanisms**

**(Marks Weightage-10)**

SN<sup>1</sup>, SN<sup>2</sup>, and SN<sup>i</sup> Nucleophilic substitution reactions with stereo chemical aspects and effect of solvent.

**2. Chemistry of Alcohols & Phenols**

**6h**

Nomenclature, any two preparations of Alcohols & Phenols

**Chemical properties**

**(Marks Weightage-5)**

a. Acidity of phenols and factors affecting it b. Ring substitution reactions (Bromination, Nitration) c. Fries rearrangements d. Kolbe's-Schmidt Reactions, e. Oxidation of diols by periodic acid and lead tetra acetate,

**Mechanisms**

**(Marks Weightage-10)**

Reimer-Tieman reaction, Claisen rearrangements, and Pinacol-Pinacolone rearrangement.

## UNIT-II

### Carbonyl Compounds

6h

Nomenclature, any two preparations of (Carbonyl Compounds) Aldehyde and ketones.

#### Chemical properties

(Marks Weightage-5)

A. Nucleophilic addition reactions of A.  $\text{NaHSO}_3$ ,  $\text{HCN}$ ,  $\text{RMgX}$  B. Nucleophilic addition reactions with ammonia derivatives, C. Wittig Reaction, Halo form Reaction, Beckmann rearrangements, Michael-addition, Benzoin condensation, Perkin Reaction. and Reformatsky reactions. Reduction reactions: Clemmenson, wolf-kishner,  $\text{LiAlH}_4$  and  $\text{NaBH}_4$ .

#### Mechanisms

(Marks Weightage-10)

Aldol condensation, Cannizzaro Reaction, Baeyer-Villiger oxidation.

## UNIT-III

### Carboxylic Acids and their Derivatives

16h

Nomenclature, any two preparations of Carboxylic Acids, and their derivatives.

#### Chemical properties

(Marks Weightage-5)

A. Reactions involving H, OH and COOH groups- salt formation, anhydride formation, acid chloride formation, amide formation and esterification,

B. Huns-Diecker reaction, Schimdt reaction, Curtius rearrangement, Arndt-Eistert synthesis, C. Typical Reactions of dicarboxylic acids, hydroxy acids and unsaturated acids. Reactions of acid chlorides, anhydrides, esters and amides.

#### Mechanisms

(Marks Weightage-10)

Mechanism of acidic and alkaline hydrolysis of esters, Hell-Volhard- Zelinsky.

#### Active methylene compounds

(Marks Weightage-10+5)

Acetoacetic esters: keto-enol tautomerism, preparation by Claisen condensation (mechanism), Acid hydrolysis and ketonic hydrolysis. Synthetic applications:Preparation of a) monocarboxylic acids (Acetic acid, Propanoic acid) b) Dicarboxylic acids (Succinic acid, Adipic acid).

C) Reaction with urea.

Malonic ester: preparation from acetic acid.

Synthetic applications: Preparation of a) monocarboxylic acids (Acetic acid, Propanoic acid)

b) Dicarboxylic acids (succinic acid and adipic acid) C.Reaction with urea.

## **SPECTROSCOPY**

### **UNIT-IV**

#### **Spectrophotometry** **6h** **(Marks Weightage-5+5)**

General feature of absorption-Beer-Lambert's law and its application, transmittance Absorbance, and molecular absorptivity. Single and double beam Spectrophotometers. Applications of Beer-Lambert's for Quantitative analysis of 1. Chromium in  $K_2Cr_2O_7$  2. Manganese in Manganous sulphate.

#### **Electronic spectroscopy:** **6h** **(Marks Weightage-10)**

Interactions of electromagnetic radiations with molecules and types of molecular spectra. Energy levels of molecular orbital ( $\sigma$ ,  $\pi$ , n). Selection rules for electronic spectra. Types of electronic transitions in molecules, effect of conjugation. Concept of chromophore and auxochrome.

#### **Nuclear Magnetic Resonance (NMR) spectroscopy:** **6h** **(Marks Weightage-10+5)**

Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals - spin-spin coupling, coupling constants. Applications of NMR with suitable examples - ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone.

### **UNIT-V**

**8h**

#### **Application of Spectroscopy to Simple Organic Molecules** **(Marks Weightage-10)**

##### **Application of visible, ultraviolet and infrared spectroscopy in organic molecules.**

Application of electronic spectroscopy and Wood ward rules for calculating  $\lambda_{max}$  of conjugated dienes and  $\alpha,\beta$  – unsaturated compounds.

Infrared radiation and types of molecular vibrations, functional group and fingerprint region. IR spectra of alkanes, alkenes and simple alcohols (inter and intra molecular hydrogen bonding), aldehydes, ketones, carboxylic acids and their derivatives (effect of substitution on  $>C=O$  stretching absorptions).

#### **List of Reference Books**

1. A Text Book of Organic Chemistry by Bahl and Arunbahl
2. A Text Book of Organic chemistry by I L Finar Vol I
3. Organic chemistry by Bruice
4. Organic chemistry by Clayden

5. Spectroscopy by William Kemp
6. Spectroscopy by Pavia
7. Organic Spectroscopy by J. R. Dyer
8. Elementary organic spectroscopy by Y.R. Sharma
9. Spectroscopy by P.S.Kalsi
10. Spectrometric Identification of Organic Compounds by Robert M Silverstein, Francis X Webster
11. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
12. Furniss, B.S., Hannaford, A.J., Smith, P.W.G. & Tatchell, A.R. Practical Organic Chemistry, 5th Ed. Pearson (2012).
13. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.**

<b>SEMESTER – III</b>	<b>PAPER-III</b>	<b>PAPER CODE : CHE-301C</b>
<b>PAPER TITLE : <b>ORGANIC CHEMISTRY &amp; SPECTROSCOPY</b></b>		
<b>ACADEMIC YEAR-2021-2022</b>		

**Time: 3Hours**

**Maximum marks: 70**

**Minimum marks: 28**

**SECTION-A**

**Answer any FOUR of the following. Each question carries 5 marks.**

**4X5=20**

1. Explain relative reactivity of aryl halides.
2. Explain ring substitution reaction (bromination) in phenols.
3. Explain the reaction Beckmann rearrangement.
4. Explain the reaction Curtius-rearrangement.
5. Explain Keto-enol Tautomerism.
6. Write a short note on single beam spectrophotometer.
7. Explain absorbance and molar absorptivity.
8. Write a short note on coupling constant.

**SECTION-B**

**Answer any FIVE questions. Each question carries 10 marks.**

**5X10=50**

9. Discuss the reaction and mechanism of  $S_N^i$  nucleophilic substitutions.
10. Discuss the reaction and mechanism of Reimer-Tieman.
11. Explain Baeyer-villiger Oxidation reaction with mechanism.
12. Explain mechanism of ester hydrolysis through acidic medium.
13. Write the preparation of n- butyric acid, succinic acid and crotonic acid from malonic ester.
14. Explain the selection rules of electronic spectra.
15. Give the principle and theory involved in PMR spectroscopy.
16. Explain IR spectra of alkanes and alkenes.

**The Guidelines to be followed by the question paper setters in chemistry for the**

**III- Semester - end exams**

<b>SEMESTER – III</b>	<b>SUBJECT: CHEMISTRY</b>	<b>COURSE CODE: CHE-</b>
<b>301C</b>		
<b>PAPER TITLE : ORGANIC CHEMISTRY &amp; SPECTROSCOPY</b>		
<b>ACADEMIC YEAR-2021-2022</b>		

**Weightage for the question paper**

<b>syllabus</b>	<b>Section-A (Short answer questions)</b>	<b>Section-B (essay questions)</b>
<b>Unit-1 (30 Marks)</b>	<b>1+1</b>	<b>1+1</b>
<b>Unit-2 (15 Marks)</b>	<b>1</b>	<b>1</b>
<b>Unit-3 (30 Marks)</b>	<b>1+1</b>	<b>1+1</b>
<b>Unit-4 (35 Marks)</b>	<b>1+1+1</b>	<b>1+1</b>
<b>Unit-5 (10 Marks)</b>	<b>---</b>	<b>1</b>

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



**A.G.&S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.**

**(Accredited at "A" Grade by NAAC, Bangalore)**

**PRACTICAL SYLLABUS**

<b>Practical Paper – III</b> <b>Organic preparations and IR Spectral Analysis</b>	<b>PAPER CODE : CHE-301 P</b> <b>ACADEMIC YEAR-2021-2022</b>
--	---

**30 hrs (2 h/W) Credits: 2**

**Organic preparations:**

- i. Acetylation of one of the following compounds: amines (aniline, o-, m-, p-toluidines and o-, m-, p-anisidine) and phenols ( $\beta$ -naphthol, vanillin, salicylic acid) by any one method: a. Using conventional method. b. Using green approach
- ii. Benzoylation of one of the following amines (aniline, o-, m-, p-toluidines and o-, m-, p-anisidine).
- iii. Nitration of any one of the following: a. Acetanilide/nitrobenzene by conventional method b. Salicylic acid by green approach (using ceric ammonium nitrate).

**IR Spectral Analysis**

IR Spectral Analysis of the following functional groups with examples

- a) Hydroxyl groups
- b) Carbonyl groups
- c) Amino groups
- d) Aromatic groups

**SCHEME OF VALUATION**

1. INTERNAL MARKS- Record-10M
2. EXTERNAL MARKS-40
  - preparations of an organic compound -25M
  - Viva questions = 10 M
  - Project = 5M

TOTAL = 50 M\_\_  
A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.  
(Accredited at "A" Grade by NAAC, Bangalore)

SEMESTER – V	SUBJECT: CHEMISTRY	COURSE CODE: CHE-
501C		
PAPER TITLE : INORGANIC,ORGANIC & PHYSICAL CHEMISTRY, Paper –V		
ACADEMIC YEAR-2021-2022		

### INORGANIC CHEMISTRY

60 hrs(4h/w) Credits-3

#### UNIT – I

##### Coordination Chemistry: (10+10+5)

12h

IUPAC nomenclature - bonding theories - Review of Werner's theory and Sidg-wick's Concept of coordination - Valence bond theory - geometries of coordination numbers 4-tetrahedral and square planar and 6-octahedral and its limitations, crystal field theory - Splitting of d-orbitals in octahedral, tetrahedral and square-planar complexes - low spin and high spin complexes - factors affecting crystal-field splitting energy, merits and demerits of crystal-field theory. Isomerism in coordination compounds – structural isomerism and stereo isomerism, stereochemistry of complexes with 4 and 6 coordination numbers

#### UNIT-II

##### 1. Magnetic properties of metal complexes: (10+5)

5h

Types of magnetic behavior, spin-only formula, calculation of magnetic moments, experimental determination of magnetic susceptibility-Gouy method.

##### 2. Stability of metal complexes: (10+5)

6h

Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect, determination of composition of complex by Job's method and mole ratio method.

### ORGANIC CHEMISTRY

#### UNIT- III

##### Nitro hydrocarbons: (10+5)

5h

Nomenclature and classification-nitro hydrocarbons, structure -Tautomerism of nitroalkanes leading to aci and keto form, Preparation of Nitroalkanes, reactivity-halogenation, reaction with

HONO (Nitrous acid), Nef reaction and Mannich reaction leading to Michael addition and reduction.

#### **UNIT – IV**

**Nitrogen compounds: (10+10+5)**

**16h**

Amines (Aliphatic and Aromatic): Nomenclature, Classification into 1°, 2°, 3° Amines and Quaternary ammonium compounds. Preparative methods – 1. Ammonolysis of alkyl halides 2. Gabriel synthesis 3. Hoffman's bromide reaction (mechanism). Reduction of Amides and Schmidt reaction. Physical properties and basic character - Comparative basic strength of Ammonia, methyl amine, dimethyl amine, tri methyl amine and aniline - comparative basic strength of aniline, N-methyl aniline and N,N-dimethyl aniline (in aqueous and non-aqueous medium), steric effects and substituent effects.

**Chemical properties:** a) Alkylation b) Acylation c) Carbylamines reaction d) Hinsberg separation e) Reaction with Nitrous acid of 1°, 2°, 3° (Aliphatic and aromatic amines). Electrophilic substitution of Aromatic amines – Bromination and Nitration. Oxidation of aryl and Tertiary amines, Diazotization.

#### **PHYSICAL CHEMISTRY**

#### **UNIT- V**

**Thermodynamics (10+5+5)**

**16h**

The first law of thermodynamics-statement, definition of internal energy and enthalpy. Heat capacities and their relationship. Joule-Thomson effect- coefficient. Calculation of  $w$ , for the expansion of perfect gas under isothermal and adiabatic conditions for reversible processes. State function. Temperature dependence of enthalpy of formation-Kirchhoff's equation. Second law of thermodynamics. Different Statements of the law. Concept of entropy, entropy as a state function, entropy changes in reversible and irreversible processes. Entropy changes in spontaneous and equilibrium processes.

#### **List of Reference Books**

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G. Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by
5. Text book of physical chemistry by S Glasstone

6. Concise Inorganic Chemistry by J.D. Lee

**A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.  
(Accredited at "A" Grade by NAAC, Bangalore)**

<b>SEMESTER – V</b>	<b>PAPER-V</b>	<b>PAPER CODE : CHE-501C</b>
<b>PAPER TITLE : INORGANIC, ORGANIC &amp; PHYSICAL CHEMISTRY ACADEMIC YEAR-2021-2022</b>		

Time: 3 Hours

Maximum marks: 70

Minimum marks: 28

**SECTION-A**

**Answer any FOUR of the following. Each question carries 5 marks.**

**4X5=20**

1. Define Crystal field energy? Explain the factors affecting Crystal field energy?
2. Write short note on Magnetic behavior of metal complexes.
3. Define Stability constant? Explain Thermodynamic and kinetic stability.
4. Explain Tautomerism of Nitro alkanes.
5. Write comparative study of Basic strength of Aniline, N-methyl aniline and N,N dimethyl aniline.
6. Define the following terms (a) Enthalpy (b) Internal energy.
7. Explain entropy changes in Spontaneous and Non –Spontaneous processes.

**SECTION-B**

**Answer any FIVE questions. Each question carries 10 marks. 5X10=50**

8. Explain VBT of coordination compounds
9. Explain Crystal field splitting Theory
10. Describe Gouy's method
11. Explain Factors affecting the stability of Metal complexes.
12. What are Nitro alkanes? write any two preparation methods and two chemical reactions.
13. What are amines? Write any four chemical reactions of amines
14. Write about Electrophilic substitution of Aromatic amines
15. Define an equation for work done of an ideal gas under isothermal and adiabatic process.

**The Guidelines to be followed by the question paper setters in chemistry for the  
V- Semester - end exams**

<b>SEMESTER – V</b>	<b>SUBJECT: CHEMISTRY</b>	<b>COURSE CODE: CHE-501C</b>
<b>PAPER TITLE : INORGANIC,ORGANIC &amp; PHYSICAL CHEMISTRY, Paper –V</b>		
<b>ACADEMIC YEAR-2021-2022</b>		

Weightage for the question paper

syllabus	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1 (25 Marks)	1	1 + 1
Unit-2 (30 Marks)	1 + 1	1+1
Unit-3 (15 Marks)	1	1
Unit-4 (25 Marks)	1	1 + 1
Unit-5 (20Marks)	1 +1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE (AUTONOMOUS),  
VUYYURU.**

**(Accredited at "A" Grade by NAAC, Bangalore)**

**PRACTICAL SYLLABUS**

<b>Practical Paper – V Organic Qualitative Analysis</b>	<b>PAPER CODE : CHE-501 P ACADEMIC YEAR-2021-2022</b>
---	---

**30 hrs (2 h/W)      Credits: 2**

**Organic Qualitative Analysis:**

**50M**

Analysis of an organic compound through systematic qualitative procedure for functional group identification including the determination of melting point and boiling point .

Alcohols, Phenols, Aldehydes, Ketones, Carbohydrates, Carboxylic acids, Aromatic Primary Amines.

**SCHEME OF VALUATION**

1. INTERNAL MARKS- Record-10M
2. EXTERNAL MARKS-40
  - Analysis of an organic compound and preparation of suitable derivative-30M
  - Viva questions = 10 M

TOTAL = 50 M\_\_

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS),VUYYURU.**

**(Accredited at "A" Grade by NAAC, Bangalore)**

<b>SEMESTER – V      Paper – VI      SUBJECT: CHEMISTRY      PAPER CODE: CHE- 502C</b>
<b>PAPER TITLE : INORGANIC,ORGANIC &amp; PHYSICAL CHEMISTRY ACADEMIC YEAR-2021-2022</b>

**60 hrs (4h/w)      Credits-3**

**INORGANIC CHEMISTRY**

**UNIT-I**

**1. Reactivity of metal complexes: (10+5) 5h**

Labile and inert complexes, ligand substitution reactions -  $SN^1$  and  $SN^2$ , substitution reactions of square planar complexes - Trans effect and applications of Trans effect.

**2. Bio inorganic chemistry: (10) 5h**

Essential elements, biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Cu, Zn and Cl. Metallo porphyrins – Structure and functions of hemoglobin, Myoglobin and Chlorophyll.

**ORGANIC CHEMISTRY**

**UNIT- II**

**Heterocyclic Compounds (10+5) 10h**

Introduction and definition: Simple five membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole - Aromatic character – Preparation from 1,4,-dicarbonyl compounds, Paul-Knorr synthesis. Properties: Acidic character of pyrrole - electrophilic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation under mild conditions - Diels Alder reaction in furan. Pyridine – Structure - Basicity - Aromaticity - Comparison with pyrrole - one method of preparation and properties - Reactivity towards Nucleophilic substitution reaction.

### UNIT-III

#### Carbohydrates (10+5+5+5)

12h

**Monosaccharide's:** Glucose (aldo hexose) - Evidence for cyclic structure of glucose (some negative aldehydes tests and mutarotation) - Proof for the ring size (methylation, hydrolysis and oxidation reactions) - Pyranose structure (Haworth formula and chair conformational formula).

**Fructose** (keto hexose) - Evidence of 2 - keto hexose structure (formation of pent acetate, formation of cyanohydrin its hydrolysis and reduction by HI). Cyclic structure for fructose (Furanose structure and Haworth formula) - osazone formation from glucose and fructose – Definition of anomers with examples.

**Interconversion of Monosaccharide's:** Aldopentose to Aldohexose (Arabinose to D- Glucose, D-Mannose) (Kiliani - Fischer method). Epimers, Epimerisation - Lobry de bruyn van Ekenstein rearrangement. Aldohexose to Aldopentose (D-Glucose to D- Arabinose) by Ruff degradation. Aldohexose to Keto hexose [(+) Glucose to (-) Fructose] and Keto hexose to Aldohexose (Fructose to Glucose)

### UNIT- IV

#### Amino acids and proteins (10+10+5)

12h

**Introduction:** Definition of Amino acids, classification of Amino acids into alpha, beta, and gamma amino acids. Natural and essential amino acids - definition and examples, classification of alpha amino acids into acidic, basic and neutral amino acids with examples. Methods of synthesis: General methods of synthesis of alpha amino acids (specific examples - Glycine, Alanine, valine and leucine) by following methods: a) from halogenated carboxylic acid b) Malonic ester synthesis c) strecker's synthesis.

**Physical properties:** Zwitter ion structure - salt like character - solubility, melting points, amphoteric character, definition of isoelectric point.

**Chemical properties:** General reactions due to amino and carboxyl groups-lactams from gamma and delta amino acids by heating peptide bond (amide linkage). Structure and nomenclature of peptides and proteins.

#### Mass Spectrometry: (10M)

6h

Basic principles-Molecular ion/parent ion, fragment ions/daughter ions. Theory-formation of parent ions. Representation of mass spectrum. Identification of parent ion, (M+1),(M+2), base



peaks(relative abundance 100%) Determination of molecular formula-mass spectra of ethyl benzene, acetophenone,1-propanol.

## **PHYSICAL CHEMISTRY**

### **UNIT-V**

#### **1. Chemical kinetics (10+5)**

**10h**

Rate of reaction - Definition of order and molecularity. Derivation of rate constants for first, second, third and zero order reactions and examples. Derivation for time half change. Methods to determine the order of reactions. Effect of temperature on rate of reaction, Arrhenius equation, concept of activation energy.

#### **List of Reference Books**

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G.Mare loudan, Purdue Univ
4. Advanced Physical Chemistry by Atkins
5. Text book of physical chemistry by S Glasstone

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.**

**(Accredited at "A" Grade by NAAC, Bangalore)**

<b>SEMESTER – V</b>	<b>PAPER-VI</b>	<b>PAPER CODE : CHE-502C</b>
<b>PAPER TITLE : INORGANIC,ORGANIC &amp; PHYSICAL CHEMISTRY</b>		
<b>ACADEMIC YEAR-2021-2022</b>		

Time: 3Hours

Maximum marks: 70

Minimum marks: 28

**SECTION-A**

**Answer any FOUR of the following. Each question carries 5 marks.**

**4X5=20**

1. Explain labile and inert complex with suitable examples.
2. Explain the aromatic character of pyrrole.
3. Write the classification of Carbohydrates with suitable examples
4. How do you convert Ketohexose to Aldohexose.
5. Write a note on Ruff's degradation of an Aldohexose.
6. Write the preparation of lactams from gamma and delta amino acids
7. What is Zero order reaction? give examples

**SECTION-B**

**Answer any FIVE questions. Each question carries 10 marks. 5X10=50**

8. Explain uni molecular and bi molecular nucleophilic substitution reactions and write mechanism of nucleophilic substitution in square planar complexes.
9. Explain the role of Fe, Co, Zn in biological systems.
10. What are Hetero cyclic compounds? Write the preparation and properties of Furan.
11. Explain the structure of Fructose.
12. What are amino acids and proteins? Give two methods of preparation of  $\alpha$ -amino acids with equations.
13. Give reactions to show the presence of  $\text{NH}_2$  and  $\text{COOH}$  groups in  $\alpha$ -amino acids.
14. Write the principles of Mass spectrometry.
15. Define order of the reaction. Explain any three methods for the determination of the order of the reaction

**The Guidelines to be followed by the question paper setters in chemistry for the  
V- Semester - end exams**

<b>SEMESTER – V</b>	<b>SUBJECT: CHEMISTRY</b>	<b>PAPER CODE: CHE-502C</b>
<b>PAPER TITLE : INORGANIC,ORGANIC &amp; PHYSICAL CHEMISTRY, Paper – VI</b>		
<b>ACADEMIC YEAR-2021-2022</b>		

Weightage for the question paper

syllabus	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1 (25 Marks)	1	1 + 1
Unit-2 (15 Marks)	1	1
Unit-3 (25 Marks)	1 + 1+1	1
Unit-4 (35 Marks)	1	1 + 1 +1
Unit-5 (15 Marks)	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE (AUTONOMOUS),  
VUYYURU.  
(Accredited at "A" Grade by NAAC, Bangalore)  
PRACTICAL SYLLABUS**

<b>Practical Paper –VI Physical Chemistry</b>	<b>COURSE CODE : CHE-502 P ACADEMIC YEAR-2021-2022</b>
---	--

**30 hrs (2 h/W)    Credits: 2**

1. Determination of rate constant for acid catalyzed ester hydrolysis.
2. Determination of molecular status and partition coefficient of benzoic acid in Benzene and water.
3. Determination of Surface tension of liquid
4. Determination of Viscosity of liquid.
5. Adsorption of oxalic acid on silica gel, verification of Freundlich isotherm.

**SCHEME OF VALUATION**

2. INTERNAL MARKS- Record-10M

2. EXTERNAL MARKS-40

- Practical-30M
- Viva questions = 10 M

TOTAL = 50 M\_\_



**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF COMMERCE**

**MINUTES OF BOARD OF STUDIES**


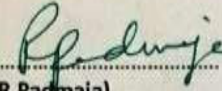
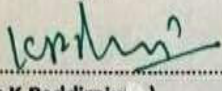
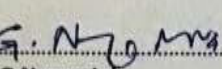
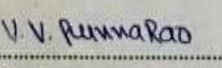

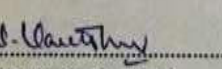
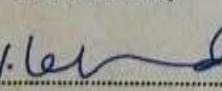
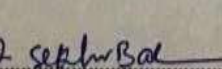
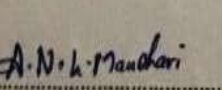
**ODD SEMESTER**

**29-10-2021**

10.30 A.M on 29-10-2021 through CiscoWebex Meeting

Dr. K.Venkateswarlu ... Presiding

Members Present:

- 1)  ..... Chairman Head, Department of Commerce  
(Dr.K.Venkateswarlu) AG & SG S Degree College of Arts & Science  
Vuyyuru
- 2)  ..... University Asst. Professor  
(Dr.R.Padmaja) Nominee Krishna University  
Machilipatnam
- 3)  ..... Subject expert Lecturer in Commerce,  
(Dr.K.Peddiraju) Govt. Degree College  
Razole
- 4)  ..... Subject expert Lecturer in Commerce  
(Dr.G.Nagaraju) Acharya Nagarjuna University  
Guntur.
- 5)  ..... Member General Manager  
(Sri V.Punna Rao) K.C.P & IC Ltd  
Vuyyuru.
- 6)  ..... Member Chartered Accountant  
(Sri V.Balaji) Managing Partner  
Balaji V & Co  
Vuyyuru
- 7)  ..... Member Ad-hoc Lecturer in Commerce  
(Sri N.Vasantha Rao) AG & SG S Degree College of Arts & Science  
Vuyyuru
- 8)  ..... Member Ad-hoc Lecturer in Commerce  
(Sri V.Gopichand) AG & SG S Degree College of Arts & Science  
Vuyyuru
- 9)  ..... Member Ad-hoc Lecturer in Commerce  
(Sri K.Sekhar Babu) AG & SG S Degree College of Arts & Science  
Vuyyuru
- 10)  ..... Member Ad-hoc Lecturer in Commerce  
(Ms A.N.L. Manohari) AG & SG S Degree College of Arts & Science  
Vuyyuru

**Agenda of B.O.S Meeting:**

1. To discuss and recommend the Syllabi, Model Question Papers and Guidelines to be followed by question paper setters in Commerce for the 1<sup>st</sup> Semester as per the guidelines and instruction under CBCS prescribed by APSCHE for the Academic Year 2021-22.
2. To discuss and recommend the Syllabi, Model Question Papers and Guidelines to be followed by question paper setters in Commerce for the 3<sup>rd</sup> Semester as per the guidelines and instructions under CBCS prescribed by APSCHE for the Academic Year 2021-2022.
3. To discuss and recommend the Syllabi, Model Question Papers and Guidelines to be followed by question paper setters in Commerce for the 5<sup>th</sup> Semester as per the guidelines and instructions under CBCS prescribed by Krishna University for the Academic Year 2021-2022.
4. To recommend the Blue print of I, III & V Semesters of B.Com (General & Computers) for the Academic Year 2021-2022.
5. To recommend the Teaching and Evaluation methods to be followed under CBCS
6. Any other suggestions regarding Certificate Course, Seminars, Workshops, Guest Lectures to be organized.
7. Any other matter.



## RESOLUTIONS

1. Discussed and recommended Continue the same syllabi, Model Question Papers and Guidelines for Question paper setters in commerce for the 1<sup>st</sup> Semester of **I B.Com., (General& Computer& e-Commerce)** for the Academic year 2021-2022. Prescribed by **APSCHE**
2. Discussed and recommended the Changed syllabi, Model Question Papers and Guidelines for question paper setters in Commerce for the 3rd Semester of **II B.Com.,(General& Computer )** for the Academic year 2021-2022. prescribed by **APSCHE**. In Business Statistics “**Diagrams and Graphic Presentation of data**” was deleted in Unit I. In Unit III “**Skeweness and Measures of Skeweness**” Introduced and A Topic Named “**Kurtosis**” was deleted. In Unit IV Two New Topics “**Analysis of Time series & Index Numbers**” Introduced.
3. Discussed and recommended that no changes are required in syllabi, but some minor changes are required in Model Question Papers and Guidelines for question paper setters in Commerce for the 5<sup>th</sup> Semester of **III B.Com., (general & computer)** for the Academic year 2021-2022.
4. It is resolved to continue the same blue prints of III. & V Semesters of Degree B.Com (**general & computer**) for the Academic year 2021-2022.
5. It is resolved to continue following Teaching and Evaluation methods for Academic year 2021-2022.
6. **It is resolved to conduct Value Added Course on “ZOHO Books” for III Sem students.**

### Teaching methods:

Besides the conventional methods of teaching, we use modern technology i.e. using of LCD projector, display on U boards etc, for better understanding of concepts.

### Evaluation of a student is done by the following procedure:

#### Internal Assessment (IA) I B.Com (General ,Computers & e-Commerce)

- Out of maximum 100 marks in each paper 25 marks shall be allocated for internal assessment for I.B.Com and (General ,Computers & e-Commerce ). Out of these 25marks, 20 Marks are allocated for announced tests (i.e. IA-1 & IA-2). Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, and remaining 5 marks are allocated for the assignment. There is no minimum passing for IA.

### **Internal Assessment (IA) II & III B.Com (General & Computers)**

- Out of maximum 100 marks in each paper 30 marks shall be allocated for internal assessment for II & III.B.Com (General & Computers ). Out of these 30 marks, 20 Marks are allocated for announced tests (i.e. IA-1 & IA-2). Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks allocated on the basis of candidate's percentage of attendance and remaining 5 marks are allocated for the assignment. There is no minimum passing for IA.

### **Semester Examinations (SE)**

- The Semester Examinations will be in the form of a comprehensive examination covering the entire syllabus in each subject. It will be of 3 hours duration, with maximum 70 marks, irrespective of the number of credits allotted to it.
  - Even though the candidate is absent for two IA exams/obtained zero marks, the external marks are considered (if he/she gets 40/70) and the result shall be declared as 'PASS'
  - The pass mark shall be 30 out of 75 in the Semester end examination for I B.Com(General ,Computers & e-Commerce)
  - The pass mark shall be 28 out of 70 in the Semester end examination forII & III.B.Com and (General & Computers)
  - The maximum marks for each Paper shall be 100.(Internal 30 + External 70)
7. Discussed and recommended to organize certificate course online/offline, seminars, Guest lectures, Online Examinations and Workshops to upgrade the knowledge of students for Competitive Examinations for the approval of the Academic Council.
8. It is resolved to follow further changes if any in the Syllabus by the Competent Authority

  
Chairman

**SEMESTER – I**

Course Code	Title of the Course	Instructors Hours per week	Credits	Evaluation		
				CIA MARKS	SEE	
					MARKS	DURATION
COMT11B	Fundamentals of Accounting (Gen, CA & E-Com)	5	4	25	75	3 Hrs.
COMT12A	Business Organization and Management (Gen, CA & E-com)	5	4	25	75	3 Hrs.
COMT13	Business Environment(Gen)	5	4	25	75	3 Hrs.
COMT14S	Entrepreneur ship Development (Gen, CA &E-Com)	2	2	10	40	2Hrs



# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

**TITLE OF THE PAPER: Fundamentals of Accounting**

**Semester: I**

<b>Course Code</b>	<b>COMT11B</b>	<b>Course Delivery Method</b>	<b>Class Room / Blended Mode - Both</b>
<b>Credits</b>	<b>4</b>	<b>CIA Marks</b>	<b>25</b>
<b>No. of Lecture Hours / Week</b>	<b>5</b>	<b>Semester End Exam Marks</b>	<b>75</b>
<b>Total Number of Lecture Hours</b>	<b>75</b>	<b>Total Marks</b>	<b>100</b>
<b>Year of Introduction:</b>	<b>Year of Offering: 2020-21</b>	<b>Year of Revision: ----</b>	<b>Percentage of Revision: 0%</b>
<b>CLASS:</b>	<b>I.B.COM., (gen/computer/E-commerce)</b>		

### **Learning Outcomes:**

- 1) The main objective of fundamental accounting is to prepare final accounts, otherwise known as the financial statements
- 2) To provide information that is useful for making business and economic decisions
3. The students of this course will be active learners and develop awareness of emerging trends in fundamentals of accounting,
4. The course will provide decision making skills to the students in the financial analysis context,
5. This course will enable the students to combine theoretical knowledge and practice of fundamentals of accounting.

### **COURSE OUTCOMES:**

At the end of the course, the student will able to

CO 1: Identify transactions and events that need to be recorded in the books of accounts.

CO 2: Equip with the knowledge of accounting process and preparation of final accounts of sole trader.

CO 3: Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP.

CO 4: Analyze the difference between cash book and pass book in terms of balance and make reconciliation.

CO 5: Critically examine the balance sheets of a sole trader for different accounting

periods.

### Syllabus

Unit	Learning Units	Lecture Hours
I	<b>Introduction</b> :Need for Accounting – Definition – Objectives, – Accounting Concepts and Conventions – GAAP - Accounting Cycle - Classification of Accounts and its Rules – Bookkeeping and Accounting - Double Entry Book-Keeping - Journalizing - Posting to Ledgers, Balancing of Ledger Accounts (including Problems).	15
II	Subsidiary Books: Types of Subsidiary Books - Cash Book, Three- column Cash Book- Petty Cash Book (including Problems).	15
III	Trial Balance and Rectification of Errors: Preparation of Trial balance - Errors – Meaning – Types of Errors – Rectification of Errors – Suspense Account (including Problems)	15
IV	Bank Reconciliation Statement: Need for Bank Reconciliation - Reasons for Difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement - Problems on both Favorable and Unfavorable Balance (including Problems).	15
V	Final Accounts: Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with Adjustments (including Problems).	15

#### Test Book Prefer:

1. Financial Accounting By: S.P.Jain & K.L. Narang. Kalyani Publishers – New Delhi.

#### Reference text books:

2. Financial Accounting – Himalaya Publishers
3. Financial Accounting – Pragathi prakesh Publishers

#### Suggested Co-Curricular Activities:

1. Quiz Programs
2. Problem Solving Exercises
3. Seminar
4. Group Discussions on problems relating to topics covered by syllabus
5. Collection of proforma of bills and promissory notes
6. Examinations (Scheduled and surprise test)
7. Bridge Course for Non-commerce Students



**A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

**Vuyyuru-521165.**

**NAAC recredited at 'A' level**  
*Autonomous -ISO 9001 – 2015 Certified*

**Model Question Paper**

<b>Commerce</b>	<b>I B.Com (Gen, CA &amp;e-Com)</b>	<b>Semester-I</b>	<b>COMT11B</b>
-----------------	-------------------------------------	-------------------	----------------

**Fundamentals of Accounting**

**Max. Marks: 75**

**SECTION - A**

**Answer any FIVE of the following.**

**5 x 5 = 25**

1. State any 5 advantages of Accounting. (CO1, L1)
2. Explain various types of Accounts and its rules. (CO1, L2)
3. Uses of Subsidiary Books. (CO2, L1)
4. Define 'Contra Entry'. What are the circumstances for passing contra entry? (CO2, L1)
5. Explain the methods for preparing Trial Balance? (CO3, L2)
6. Explain the 'Suspense account'. (CO3, L1)
7. Examine the need for Bank Reconciliation Statement. (CO4, L2)
8. Treatment of Outstanding and prepaid Expenses in final account. (CO5, L1)

**SECTION – B**

**Answer the following**

**5 x10 = 50**

**Unit - I**

9. A) Distinguish between Book Keeping and Accounting. (CO1, L2)  
(OR)  
B) Journalise the following transactions of Mr.Ramprasad. (CO1,L3 )  
2006 April 1 Ram prasad started business with cash Rs.50,000, furniture Rs.15,000 and stock Rs 10,000  
2 Opened current account with Andhra Bank Rs.20,000  
3 Received from Ragavan, a treasury order for Rs.1,000 and paid into bank.  
5 Sold goods to Rama Rao for Rs 3,000  
6 Drew from Bank for office use Rs.2,000  
9 Sold goods for cash Rs.1,200-and out of that paid Rs.800 into Bank  
10 Typewriter purchased by cheque Rs.5,000  
12 Purchased goods from Sudhakar for Rs.6,000 and paid cash Rs. 2,000  
14 Returned goods to Sudhakar Rs.200  
16 Purchased pen,pencil,paper and ink for Rs.500 and paid by cheque  
19 Sold goods to Krishna Rs.1,500 and received cash Rs.500 from him  
22 Rama Rao became insolvent and 50% of the amount due is received.

**Unit - II**

10. A) Explain the different types of Subsidiary Books. (CO2, L2)

(OR)

- B) Enter the following transactions in a Triple Column Cash Book. (CO2,L3 )

**2006**

- Jan. 1 Cash in hand Rs. 5,374, Balance at bank Rs. 15,490  
3 Cash Sales Rs. 6,400  
5 Paid into bank Rs. 7,000  
6 Received a cheque for Rs. 700 from Satyam  
8 Paid into bank Satyam's cheque  
10 Paid to Anurag by cheque Rs. 980 and discount allowed by him Rs. 20.  
12 Cash purchased Rs. 2,500  
14 Withdrew from bank for office use Rs. 5,000  
15 Received cheque for Rs. 950 from Lakshman allowed him discount Rs. 50  
18 Cash Sales Rs. 7,500  
19 Paid into bank Lakshman's cheque and Cash Rs. 4,000.  
21 Cash paid for Stationery Rs. 120.  
23 Paid Commission to Rakesh Rs. 500  
25 Received cheque for Rs. 1,000 from Mohan and Paid the same into Bank.  
27 Lakshman's cheque dishonoured.  
29 Drew a cheque for Rs. 800 for personal use.  
31 Paid Salaries by cheque Rs. 1,500 and by cash Rs. 500.  
31 Bank charges Rs. 20 and Insurance Premium Rs. 520 as shown in Pass Book.

### Unit – III

11. A) Define an Error? State the different types of Errors? (CO3, L2)

(OR)

b) A book keeper prepared a Trail Balance on 31st December, 2006 which showed a difference of Rs. 140 (excess credit). The difference was placed to a suspense account. The following errors were subsequently located.

- A sale of goods to Raja for Rs. 600 had been posted to the wrong side of his account.
- A purchase of goods for Rs. 1,640 from Uma has been posted to the personal account as Rs. 640.
- A credit sale of old furniture for Rs. 150 had been passed in sales day book.
- The discount received account had been cast short Rs. 60.
- Payment of rent Rs. 340 was debited to the personal account of the landlord.

Pass Journal entries to rectify the errors and prepare the suspense account. (CO 3 L4)

### Unit - IV

12. A) Explain the causes for the distinction between Cash book and Pass book balance? (CO4, L2)

(OR)

B) On 31st March 2006 the bank balance of Dinesh Agnihotri appeared at Rs. 7,654 as per the bank columns of the cash book. On reconciling with the pass book, the following facts were ascertained:

1. That out of the cheques for Rs. 1,800 issued by him on 26th March, cheques worth Rs. 400 were presented to the bankers before 31st March and those worth Rs.500 were presented on 11th April. The other cheques were not so far cashed.
2. That a Bill Receivable for Rs. 1,000 was realised by the bankers on 29th March, but no corresponding entry was passed in the cash book.
3. That out of the up country cheques for Rs.2,800 paid in on 28th March, one cheque for Rs. 900 was not yet credited by the bankers.
4. That debit in respect of the bank charges amounting to Rs. 92.50 and credits in respect of interest on investment for Rs. 150 and dividends realised Rs. 800 were not passed through the cash book.
5. That a wrong debit of Rs. 350 relating to some other account appeared in pass book.

You are required to ascertain the bank balance shown by the bank pass book on 31st March 2006. (CO4,L3 )

### Unit - V

- .A. Explain the procedure for preparation of Final accounts for a sole trader.(CO5, L2)

(OR)

B. From the following Trial Balance of Smt. Girija Stores, prepare final accounts for the year ending 31-12-2015. (CO 5,L4)

<b>Trial Balance</b>			
<b>Debit Balance</b>	<b>Amount</b>	<b>Credit Balance</b>	<b>Amount</b>
Purchases	70,000	Sales	1,00,000
Sales Returns	1,000	Capital	80,000
Carriage	500	Purchase returns	2,000
Salaries	1,500	Creditors	25,000
Rent	1,000	Commission	2,000
Insurance	500	Provision for bad debts	2,100
Debtors	20,000	Bills payable	5,000
Plant & Machinery	50,000		
Furniture	9,000		
Cash at Bank	20,000		
Opening Stock	25,000		
Bills receivable	16,000		
Wages	1,100		
Advertisement	500		
	<b>2,16,100</b>		<b>2,16,100</b>

#### **Adjustments :**

1. Closing stock Rs 30,000
2. Outstanding salaries Rs.200
3. Depreciate Machinery by 10%, Furniture by 5%.
4. Provide 5% reserve for bad debts on debtors.
5. Prepaid wages Rs.100.





# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

**TITLE OF THE PAPER: Business Organization and Management**

**Semester: I**

<b>Course Code</b>	<b>COMT12A</b>	<b>Course Delivery Method</b>	<b>Class Room / Blended Mode - Both</b>
<b>Credits</b>	<b>4</b>	<b>CIA Marks</b>	<b>25</b>
<b>No. of Lecture Hours / Week</b>	<b>5</b>	<b>Semester End Exam Marks</b>	<b>75</b>
<b>Total Number of Lecture Hours</b>	<b>75</b>	<b>Total Marks</b>	<b>100</b>
<b>Year of Introduction:</b>	<b>Year of Offering: 2012-13</b>	<b>Year of Revision: ----</b>	<b>Percentage of Revision: 0%</b>
<b>CLASS:</b>	<b>I.B.COM., (gen/computer/E-commerce)</b>		

### Course Objectives:

**CO1**-Recall the basic knowledge on conceptual areas such as commerce trade and industry of different types of business organizations. (PO4, PO5)

**CO2**-Have a demonstrated understanding on nature purpose and importance of different types of organizations.(PO4, PO5)

**CO3**-Articulate the fundamentals of joint-stock company as per companies Act 2013. (PO2, PO4, PO5)

**CO4**-Appraise the documentation and incorporation stages of a company. (PO2, PO4, PO5)

**CO5**-Discuss and implement the managerial traits and talents essential for managing business. (PO1, PO4, PO5)

### Learning Outcomes :

At the end of the course, the student will be able to

- Understand different forms of business organizations.
- Comprehend the nature of Joint Stock Company and formalities to promote a Company.
- Describe the Social Responsibility of Business towards the society.
- Critically examine the various organizations of the business firms and judge the best among them.
- Design and plan to register a business firm. Prepare different documents to register a company at his own.
- Articulate new models of business organizations.

## Syllabus

Unit	Learning Units	Lecture Hours
I	<b>Introduction Concepts of Business, Trade, Industry and Commerce:</b> Business – Meaning, Definition, Features and Functions of Business - Trade Classification – Aids to Trade – Industry Classification and Commerce - Factors Influencing the Choice of Suitable form of Organization.	15
II	<b>Forms of Business Organizations:</b> Features, Merits and Demerits of Sole Proprietorship and Partnership Business - Features Merits and Demerits of Joint Stock Companies - Public Sector Enterprises (PSEs) - Multinational Corporations (MNCs)- Differences between Private Limited Public Limited Company.	15
III	<b>Company Incorporation:</b> Preparation of Important Documents for Incorporation of Company - Certificate of Incorporation and Certificate of Commencement of Business - Contents of Memorandum and Articles of Association – Content of Prospectus.	15
IV	<b>Management:</b> Meaning Characteristics - Fayol's 14 Principles of Management - Administration Vs. Management - Levels of Management.	15
V	<b>Functions of Management:</b> Different Functions of Management - Meaning – Definition – Characteristics Merits and Demerits of Planning - Principles of Organization – Line and staff of Organization.	15

### **Text book:**

Business Organization and management – R.K.Sharma, Monika Aggarwal, Rahul Sharma.

### **Reference Books:**

1. Business Organization - C.D. Balaji and G. Prasad, Margham Publications, Chennai.
2. Business Organization - R.K. Sharma and Shashi K Gupta, Kalyani Publications.
3. Business Organization & Management: Sharma Shashi K. Gupta, Kalyani Publishers. \_\_\_

### **Curricular Activities:**

**Classroom activities:** Face to face interactions in the class, conventional chalk dust method of teaching, using audio visual aids, synchronous, asynchronous and hybrid method of online teaching by using suitable platform, spot tests, listing assignments, conduct quizzes, Google class rooms organizing group discussions, preparing question banks.

**Library activities:** Reading books, journals and magazines, glancing question papers of previous Years. Organization of activities like seminars, workshops and conferences

### **Co-Curricular Activities:**

- Book Reading, Student Seminars, Debates
- Quiz Programme
- Assignments Field studies (Individual/Group)



A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
Vuyyuru-521165.

NAAC recredited at 'A' level  
Autonomous -ISO 9001 – 2015 Certified

**Model Question Paper**

Commerce	I B.Com (Gen, CA & e-Com)	Semester-I	COMT12A
----------	---------------------------	------------	---------

**Title of the Paper: Business Organisation and Management**

**Time: 3 Hours**

**Max.**

**Marks:75**

**Section – A**

**Answer any FIVE of the following.**

**5x5=25**

1. Explain the characteristics of Business. **CO1, L1**
2. Explain the types of Industries. **CO1, L1**
3. Explain the features of Sole proprietor. **CO2, L1**
4. What is partnership deed? **CO2, L1**
5. Define Joint Stock Company. What are its features? **CO3, L1**
6. Articles of Association. **CO3, L1**
7. Define Levels of Management. **CO4, L1**
8. Explain Merits of Planning. **CO5, L1**

**Section – B**

**Answer the following.**

**5x10=50**

**Unit - I**

9. A). What are the various types of Industries? **CO1,L1**  
OR  
B). Distinguish between Trade, Commerce and Industry. **CO1, L2**

**Unit - II**

10. A). Define Partnership firm. What are the characteristics of a partnership of the form of organization? **CO2, L1**  
OR  
B). Distinguish between private company and public company. **CO2, L2**

**Unit – III**

- A) What is Memorandum of Association? What are its contents? **CO3, L1OR**  
B). Distinguish between Memorandum of Association and Articles of Association. **CO3, L2**

**Unit – IV**

- A) Explain Henry Fayol's Principles of Management. **CO4, L1**  
OR  
B) Define Management. Distinguish between Administration and Management. **CO4, L2**

**Unit – V**

13. A) Define Planning. What are its characteristics? **CO5, L1**  
OR  
B) Define Organisation. What are the principals of Organisation? **CO5, L1**



# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

**TITLE OF THE PAPER: Business Environment**

**Semester: I**

<b>Course Code</b>	<b>COMT13</b>	<b>Course Delivery Method</b>	<b>Class Room / Blended Mode - Both</b>
<b>Credits</b>	<b>4</b>	<b>CIA Marks</b>	<b>25</b>
<b>No. of Lecture Hours / Week</b>	<b>5</b>	<b>Semester End Exam Marks</b>	<b>75</b>
<b>Total Number of Lecture Hours</b>	<b>75</b>	<b>Total Marks</b>	<b>100</b>
<b>Year of Introduction:</b>	<b>Year of Offering: 2021-22</b>	<b>Year of Revision: ----</b>	<b>Percentage of Revision: 0%</b>
<b>CLASS:</b>	<b>I.B.COM., (gen)</b>		

## **Course Objectives:**

- This course aims at acquainting the students with emerging issues in business at the National and International level in the light of policies of liberalization and Globalization.
- evaluate the economic, social political and legal environment components in business decision making.

## **Course Outcomes:**

**CO1:** Understand how an entity systematically explores the external environment in which business operates.

**CO2:** To enlighten/familiarize the impact of economic environment and its effect on government policies for development of business.

**CO3:** To acquire specialized knowledge relating to economic policies in India.

**CO4:** critically examine the economic, social political and legal environment components in business decision making.

**CO5:** synthesize multiple perspective to formulate responses to opportunities and institutions in international environment.

**Syllabus**  
**Business Environment**

Unit	Learning Units	Lecture Hours
I	<b>Overview of Business Environment:</b> Business Environment – Meaning – Characteristics – Scope -Macro and Micro Dimensions of Business Environment -Environmental Analysis- Purpose & Techniques.	15
II	<b>Economic Environment:</b> Economic Environment – Nature of the Economy – Structure of Economy – Economic Policies & Planning the Economic Condition – NITI Ayog – National Development Council – Five Year Plans	15
III	<b>Economic Policies:</b> Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Monetary Policy and RBI	15
IV	<b>Social, Political and Legal Environment:</b> Concept of Social Responsibility of Business towards Stakeholders - Demonetization, GST and their Impact - Political Stability - Legal Changes.	15
V	<b>Global Environment:</b> Globalization – Meaning – Role of WTO – WTO Functions -IBRD– Trade Blocks, BRICS, SAARC, ASEAN in Globalization	15

**Text book:** . Rosy Joshi and Sangam Kapoor :Business Environment

**Reference Books**

1. K. Aswathappa : Essentials of Business Environment, Himalaya Publishing House
2. Francis Cherunilam : Business Environment, Himalaya Publishing House
3. Dr S Sankaran: : Business Environment, Margham Publications

**Co-curricular activities**

- ◆ Seminar on overview of business environment
- ◆ Debate on micro v/s macro dimensions of business environment
- ◆ Seminar on Monetary policies of RBI
- ◆ Debate on social, political and legal environment
- ◆ Group Discussions on Global environment and its impact on business
- ◆ To learn about NITI Ayog and National Development Council
- ◆ Seminars on Economic policies like New Industrial policy, Fiscal policy etc.
- ◆ Reports on WTO, BRICS, SAARC



**A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**Vuyyuru-521165.**

**NAAC recredited at 'A' level**  
*Autonomous -ISO 9001 – 2015 Certified*

**Model Question Paper**

<b>Commerce</b>	<b>I B.Com (Gen)</b>	<b>Semester-I</b>	<b>COMT13</b>
-----------------	----------------------	-------------------	---------------

**Business Environment**

**Time: 3 Hours**

**75**

**Max Marks:**

**Section A**

**Answer any five of the following**

**25M**

**5 X 5M =**

1. What are the objectives of Business Environment? (CO1, L1)
2. Write the features of socialism (CO1, L1)
3. Write about National Development Council (CO2, L1)
4. Explain the functions of NITI Aayog (CO2, L2)
5. Describe about the structure of Indian Economy (CO3, L2)
6. List out the revenue sources to State Government (CO3, L1)
7. What is Political Environment (CO4, L1)
8. Explain BRICS (CO5, L2)

**Answer the following**

**5 X 10M = 50M**

**Unit - I**

9. A) What is Business Environment? Explain the characteristics of Business Environment. (CO1, L1)

(or)

- B) Explain micro and macro environmental factors of business environment? (CO1, L2)

**Unit - II**

10. A) Define economic growth? What are the determinants of economic growth? (CO2, L1)

(or)

- B) Distinguish between NITI Aayog & Planning Commission. (CO2, L2)

**Unit - III**

11. A) Write about the monetary policy in India. (CO3, L2)

(or)

- B) Explain Competition Act, 2002. (CO3, L1)

**Unit - IV**

12. A) Write about the social responsibility of business. (CO4, L1)

(or)

- B) Explain the Impact of Demonetization on Indian Economy (CO4, L2)

**Unit - V**

13. A) Explain the role of WTO. (CO5, L2)

(or)



B) What is Globalization? Explain its Features. (CO5, L2)

**A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**Vuyyuru-521165.**

**NAAC recredited at 'A' level**  
*Autonomous -ISO 9001 – 2015 Certified*

**TITLE OF THE PAPER: ENTREPRENEURSHIP DEVELOPMENT**

<i>Commerce</i>	COMT14S	2021-2022	<i>I.B.com(comp)</i>
-----------------	---------	-----------	----------------------

**Semester – I**

**Credits: 2**

(Total 30 Hrs)

CO1: To familiarize students with various concepts used in understanding process involved in entrepreneurship and business formation and development.

CO2: To identify various sources to generate potential business ideas for new ventures and also enabling students to prepare a good feasibility report based on their understanding of the project appraisal techniques.

CO3: Understand the role of financial institutions in extending their support for the entrepreneur development and also acquiring thorough knowledge on various government policies and tax benefits supporting small scale industries.

## Syllabus

**Unit-I:Entrepreneurship:** Entrepreneur characteristics – Classification of Entrepreneurships –Roleof Entrepreneurship in economic development –Start-ups.

**Unit-II:Idea Generation and Project Formulation:** Sources of New Ideas in Entrepreneurships – Techniques for generating ideas - Preparation of Project Report – Content; Guidelines for Report preparation – Project Appraisal techniques – Economic Analysis; Financial Analysis; MarketAnalysis.

**Unit-III:Institutions Supporting and Taxation Benefits:** Central level Institutions: NABARD; SIDBI, NSIC – state level Institutions –DICs- SFC- SSIDC- Government Policy for SSIs- tax Incentives and Concessions –Non-tax Concessions Rehabilitation and Investment Allowances.

Reference Books:

1. Arya Kumar, Entrepreneurship, Pearson, Delhi, 2012.
2. Poornima M.CH., Entrepreneurship Development –Small Business Enterprises, Pearson,Delhi,2009
3. Michael H. Morris, ET. al., Entrepreneurship and Innovation, Cen gage Learning, New Delhi,2011
4. KanishkaBedi, Management and Entrepreneurship, Oxford University Press, Delhi, 2009
5. Anil Kumar, S., ET.al., Entrepreneurship Development, New Age International Publishers, NewDelhi, 2011
6. Khanka, SS, Entrepreneurship Development, S. Chand, New Delhi.
7. Peter F. Drucker,Innovation and Entrepreneurship.



<i>Commerce</i>	COMT14S	2021-2022	<i>I.B.com(comp , Gen &amp; E-com)</i>
-----------------	---------	-----------	--

Semester – I

**MODAL PAPER  
ENTREPRENEURSHIP DEVELOPMENT**

**Credits: 2**

**Section - A**

**I Answer any TWO of the following:**

**2 X 5M = 10M**

1. Explain the functions of startup companies.
2. Explain the various sources of new ideas in developing a business idea
3. Explain any two project appraisal techniques
4. Write about Rehabilitation allowance and investment allowance.

**Section - B**

**II Answer any THREE of the following:**

**3 X 10M = 30M**

5. Explain the role of an Entrepreneur in the Economic development of a country.
6. Write about the Classification of Entrepreneurships
7. Develop guidelines for report preparation
8. Give an account of any three central level institutions.
9. Write about the Tax-Concessions offered to SSIs.

Commerce	<b>SKILL DEVELOPMENT COURSES COB-301 G/C</b>	2021-2022	II.B.Com(gen/comp)
----------	--	-----------	--------------------

**SYLLABUS:**

**ONLINE BUSINESS**

**Learning Outcomes:**

*After successful completion of the course, students will be able to;*

1. Understand the online business and its advantages and disadvantages
2. Recognize new channels of marketing, their scope and steps involved
3. Analyze the procurement, payment process, security and shipping in online business
4. Create new marketing tools for online business
5. Define search engine, payment gateways and SEO techniques.

**Section-I:** 06 Hrs

Introduction to Online-business-Definition-Characteristics-Advantages of Online Business- Challenges- Differences between off-line business, e-commerce and Online Business.

**Section-II:** 10 Hrs

Online-business Strategies-Strategic Planning Process- Procurement -Logistics & Supply Chain Management- Customer Relationship management.

**Section-III:** 10 Hrs

Designing Online Business Website – Policies - Security & Legal Issues -Online Advertisements - Payment Gateways - Case Study

**Co-curricular Activities Suggested:** (4 hrs)

1. Assignments, Group discussion, Quiz etc.
2. Short practical training in computer lab
3. Identifying online business firms through internet
4. Invited Lectures by e-commerce operators
5. Working with Google and HTML advertisements.
6. Visit to a local online business firm.

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYURU*

*(AUTONOMOUS)*

**(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL  
EDUCATION VIJAYAWADA)**

<i>Commerce</i>	<b>SKILL DEVELOPMENT COURSES COB-301 G/C</b>	<i>2021-2022</i>	<i>II.B.Com(gen/comp)</i>
-----------------	--	------------------	---------------------------

**MODEL PAPER:**

**ONLINE BUSINESS**

**DURATION: 2 HOURS**

**SECTION – A**

**Max:50**

**ANSWER ANY FOUR OF THE FOLLOWING QUESTIONS**

**(4x5=20M)**

1. Define Online Business
2. Explain Characteristics of Online Business
3. E-Commerce
4. Online Business strategies
5. Supply Chain Management
6. Customer Relationship Management
7. Legal issues of Online Business
8. Online Advertising

**SECTION – B**

**ANSWER ANY THREE OF THE FOLLOWING QUESTIONS**

**(3x10=30M)**

9. Explain the Advantages of Online Business?
10. What are the differences between Offline and Online Business?
11. Explain about Online Business Strategic planning process
12. Describe Online Business Strategic Planning process
13. How do you Design Online Business Website
14. Describe the Policies of Online Business

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**

**(AUTONOMOUS)**

**(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL  
EDUCATION VIJAYAWADA)**

<i>Commerce</i>	<b>SKILL DEVELOPMENT COURSES COB-301 G/C</b>	<i>2021-2022</i>	<i>II.B.Com(gen/comp)</i>
-----------------	--	------------------	---------------------------

**MODEL PAPER:**

**ONLINE BUSINESS**

Marks	UNIT-I	UNIT-II	UNIT-III
	Introduction Online business	Online business Strategies	Designing Online Business Website
5Marks	3	3	2
10Marks	2	2	2
Weight age	35	35	30

Commerce	CAA-302G/C	2021-2022	II.B.Com(gen/comp)
----------	------------	-----------	--------------------

**SEMESTER –III SYLLABUS**

**Advanced Accounting**

**Learning Outcomes**

At the end of the course, the student will able to

- ❖ Understand the concept of Non-profit organization's and its accounting process
- ❖ Comprehend the concept of single-entry system and preparation of statement of affairs
- ❖ Familiarize with the legal formalities at the time of dissolution of the firm
- ❖ Prepare financial statements for partnership firm on dissolution of the firm
- ❖ Employ critical thinking skills to understand the difference between the dissolution of the firm and dissolution of partnership

Commerce	CAA-302G/C	2021-2022	II.B.Com(gen/comp)
----------	------------	-----------	--------------------

SEMESTER –III

SYLLABUS

**Advanced Accounting**

**Unit-I: Accounting for Non Profit Organisations:** Non Profit Entities- Meaning - Features of Non-Profit Entities –Provisions as per Sec 8 - Accounting Process- Preparation of Accounting Records - Receipts and Payments Account- Income and Expenditure Account - Preparation of Balance Sheet (including problems)

**Unit-II: Single Entry System:** Features – Differences between Single Entry and Double Entry – Disadvantages of Single Entry- Ascertainment of Profit and Preparation of Statement of Affairs (including Problems).

**Unit-III: Hire Purchase System:** Features –Difference between Hire Purchase and Installment Purchase Systems - Accounting Treatment in the Books of Hire Purchaser and Hire Vendor - Default and Repossession (including Problems)

**Unit-IV: Partnership Accounts-I:** Meaning – Partnership Deed - Fixed and Fluctuating Capitals- Accounting Treatment of Goodwill - Admission and Retirement of a Partner(including problems)

**Unit-V: Partnership Accounts-II:** Dissolution of a Partnership Firm – Application of Garner v/s Murray Rule in India – Insolvency of one or more Partners (including problems).

**Reference Books:**

1. Corporate Accounting – Haneef & Mukherji,
2. Corporate Accounting – RL Gupta & Radha swami
3. Corporate Accounting – P.C. Tulsian

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU*  
(AUTONOMOUS)  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CAA-302G/C C</i>	<i>2021-2022</i>	<i>II.B.Com(gen/comp)</i>
-----------------	---------------------	------------------	---------------------------

*SEMESTER –III*

**Advanced Accounting**

Model Question Paper

Time: 3 hours

Max. Marks: 70

SECTION - A

I. Answer any TWO of the following questions

2 x 5 =10M

1. Write the features of Non Profit Organizations
2. Write about Repossession of Goods
3. Explain different types of partners
4. Garner vs Murraya Case

SECTION - B

II. Answer any FOUR of the following questions

4 x15 =60M

- 5).Discribe the Difeerrnce between Hire purchase and Installment Purchase System
- 3). write the Difference between Income and Expenditure account and Receipts and payment accounts
- 7) Write about fixed and fluctuating Capital Methods

8).The following is the Receipts and Payments Account of Indian Sports Club for the first year Ending as on 31-3-2014

Receipts	Rs.	Payments	Rs.
To Donations	5,00,000	By Pavilion constructed	4,00,0000
To Reserve fund (life and Entrance fee)	40,000	By Expenditure in connective with matches	9,000 600
To Receipts from matches	80,000	By Furniture	21,000
To Revenue receipts		By investment at cost	160000
Subscription	52,000	By Revenue Payments	
Locker Rent	500	Salaries	18,000
interest on securities	2400	Wages	6000
Sundries	3500	Insurance	3,500
		Telephone	2500
		Electricity	1100
		Sundry expenses	2100
		By Balance on hand	55200
	6,78,400		6,78,400

Additional information:

1. Donations received have to be Capitalised .
2. Outstanding bills for sundry expenses Rs.400
3. Wages unpaid for the year Rs.900
4. Salaries unpaid for the year Rs. 1700
5. Subscriptions outstanding for the year Rs. 2500

Prepare income and Expenditure account and the balance sheet for the year ended 31-3-2014

9). A motor company purchased two trucks on 1<sup>st</sup> Jan 2004. The cost price being Rs.56,000. The purchase is on Hire purchase basis. Rs. 15,000 being paid. On signing the agreement and there after Rs. 15,000 being paid annually for 3 years. Interest was charged at 5%. Depreciation was written off at the rate of 20% per annum on the reducing installment system. Give necessary journal entries in the books of motor company.



10). A trader keeps his books by the single entry method. His position on 31<sup>st</sup> March 2018 was as follows:

<b>Particulars</b>	<b>Amount</b>
Cash at bank	9,000
Stock	60,000
Debtors	90,000
Machinery	150,000
Creditors	69,000

**His position on 31<sup>st</sup> March 2019 was as follows :**

<b>Particulars</b>	<b>Amount</b>
Cash at bank	12,000
Stock	75,000
Debtors	135,000
Machinery	135,000
Creditors	75,000

During the year the trader introduced Rs.30,000 as further capital in the business and withdraw Rs.900 per month. From the above you are required to ascertain the profit or loss made by the trader for the year ended 31<sup>st</sup> March 2019.

11). Kumar, Ramji are partners in a business sharing profits and losses equally. Their balance sheet on 31<sup>st</sup> December 2005 stood as under.

<b>Liabilities</b>	<b>Amount</b>	<b>Assets</b>	<b>Amount</b>
Creditors	2,000	Cash at bank	1,000
Capital Accounts:		Sundry Debtors	5,000
Kumar	40,000	Stock	10,000
Ramji	28,000	Machinery	18,000
		Furniture	5,000
		Buildings	31,000
	70,000		70,000

They decided to admit Sinha into firm on 1<sup>st</sup> Jan 2006 on the following terms. ( a )

Sinha has to pay Rs. 25,000 for 1/4 share in future profits.

( b ) Sinha has to pay Rs. 8,000 for goodwill.

( c ) Machinery be depreciated by 10% and stock be depreciated by 10%. ( d )

5% reserve for doubtful debts be created on debtors.

( e ) Buildings to be appreciated by 20%.

Pass necessary journal entries to give effect to the above arrangement and the opening balance sheet of a Kumar, Ramji and Sinha.

12) Krishna and Kishore are equal partners in a business. They agreed to dissolve the partnership on 31<sup>st</sup> December 2006. On which date their Balance Sheet was as follows.

Liabilities	Amount	Assets	Amount
Sundry creditors	2,580	Cash at bank	1,500
Capital Accounts		Sundry debtors	2,775
Krishna           7,500		Stock	7,575
Kishore           6,000	13,500	Furniture	1,500
		Premises	3,000
	16,350		16,350

The assets realised as follows.

Premises Rs. 3,180, Furniture Rs.1,650, and Stock Rs. 6,900. The debtors realized Rs. 2,700. The creditors were paid Rs. 2,800 in full settlement

The realisation expenses amounted to Rs. 300

Pass necessary journal entries and show the realisation account, bank account and partners capital account.

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU*  
*(AUTONOMOUS)*  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CAA-302G/C</i>	<i>2021-2022</i>	<i>II.B.Com(gen/comp)</i>
-----------------	-------------------	------------------	---------------------------

*SEMESTER –III*

**Advanced Accounting**

Guidelines to the paper setter

Marks	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Accounting for Share Capital	Profits prior to incorporation	Valuation of Goodwill and Shares:	Company Final Accounts:	Provisions of the Companies Act, 2013
5Marks	1	1	0	1	1
15Marks	1T+1P	1P	1T+1P	1T+1P	1T
Weight age	35	20	35	15	20

AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU

(AUTONOMOUS)

(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

Commerce	CBS -303G/C	2021-2022	<i>II.B.Com(gen/comp)</i>
----------	-------------	-----------	---------------------------

SEMESTER – III

### **Business Statistics**

**Objective: 1.** The objective of this course is to impart knowledge on the application of Statistical tools and techniques in business decision making.

2. To make the students acquire the knowledge of Design, evaluate and apply correlation analysis

### **COURSE OUTCOMES**

CO1- Describe the structure and characteristics of statistical data. able to present the data with diagrams

CO2- Calculate and interpret measures of central tendency and variability in statistical data.

CO3- Calculate and interpret measures of dispersion and skewness

CO4- Design, evaluate and apply correlation analysis.

CO5- To study the past behaviour of data and measure the effect of changes over the period of time.

Commerce	CBS-303G/C	2021-2022	II.B.Com(gen/comp)
----------	------------	-----------	--------------------

SEMESTER –III

SYLLABUS

**Business Statistics**

**Unit 1 Introduction to Statistics:**

Definition, Importance and limitation of statistics, Collection of data, Schedule and questionnaire, Frequency distribution, Tabulation

**Unit 2: Measures of Central Tendency:**

Characteristics of measures of central tendency, Types of Averages, Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode

**Unit 3: Measures of dispersion and Skewness:**

Properties of dispersion, Range, Quartile Deviation, Mean deviation, Standard deviation, Coefficient of Variation, Skewness Definition, Karl Pearson's and Bowley's Measures Of skewness

**Unit 4: Measures of Relation:**

Meaning and use of correlation, Types of correlation, Karl Pearson's correlation coefficient, Probable Error, Spearman's Rank correlation, Regression analysis comparison between correlation and Regression, Regression Equations

**Unit 5: Analysis of Time Series & Index Numbers**

Meaning and utility of time series, Components of Time series, Measurement of trend and Seasonal Variations, Techniques of Time series analysis, Methods of averages (Semi, Moving averages), Least square method, Index Numbers, Methods of Construction of Index numbers, Price index numbers, Limitations of index numbers

Suggested Readings:

1. Business Statistics Reddy, C.R Deep Publications.
2. Statistics-Problems and Solutions Kapoor V.K.

**Revision of the syllabus 2021-22 (SEM -1,3,5)**

Name of the Subject: **Business Statistics**

Subject Code: CBS303G/C

Academic Year	2021-22
Title of the paper	<b>Business Statistics</b>
Semester	III
Course code	CBS303G/C
CIA marks	30
Semester End marks	70
Total marks	100
Year of Introduction	2012-13
Year of Revision	2021-22
% of revision	25%

UNIT	Syllabus	Addition	Deletion
I	<b>Introduction to Statistics:</b> Definition, Importance and limitation of statistics, Collection of data, Schedule and questionnaire, Frequency distribution, Tabulation	Nil	<b>Diagrams and Graphic Presentation of Data (including problems)</b>
II	<b>Measures of Central Tendency:</b> Characteristics of measures of central tendency, Types of Averages, Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode	Nil	Nil
III	<b>Measures of dispersion and Skewness:</b> Properties of dispersion, Range, Quartile Deviation, Mean deviation, Standard deviation, Coefficient of Variation, Skewness Definition, Karl Pearson's and Bowley's Measures Of skewness	<b>Skewness Measures of Skewness: Absolute and Relative Measures- Coefficient of Skewness: Karl Pearson's, Bowley's</b>	<b>Kurtosis: Meso kurtosis, Platy kurtosis and Leptokurtosis (including problems)</b>
IV	<b>Measures of Relation:</b> Meaning and use of correlation, Types of correlation, Karl Pearson's correlation coefficient, Probable Error, Spearman's Rank correlation, Regression analysis comparison between correlation and Regression, Regression Equations	Nil	Nil

V	<p><b>Analysis of Time Series &amp; Index Numbers</b>  Meaning and utility of time series, Components of Time series, Measurement of trend and Seasonal Variations, Techniques of Time series analysis, Methods of averages(Semi , Moving averages), Least square method, Index Numbers, Methods of Construction of Index numbers, Price index numbers, Limitations of index numbers.</p>	<p><b>Analysis of Time Series &amp; Index Numbers</b>  <b>Meaning and utility of time series, Components of Time series, Measurement of trend and Seasonal Variations, Techniques of Time series analysis, Methods of averages(Semi , Moving averages), Least square method, Index Numbers, Methods of Construction of Index numbers, Price index numbers, Limitations of index numbers.</b></p>	Nil
---	---	--	-----



Commerce	CBS-303G/C	2021-2022	II.B.Com(gen/comp)
----------	------------	-----------	--------------------

SEMESTER –III

Business Statistics

Model Question Paper

Time: 3 hours

Max. Marks: 70

SECTION - A

I. Answer any TWO of the following questions

2× 5 = 10 M

1. What are the Limitations of Statistics.
2. What are the different types of average?
3. Explain the Skewness?
4. Explain the Different types of Correlation ?

SECTION - B

II. Answer any FOUR of the following

4×15 =60 M

5. What is Questionnaire? Discuss the precautions to be taken while preparing a Questionnaire.
6. Calculate Mode.

C.I	10-20	20-30	30-40	40-50	50-60	60-70
F	4	7	16	20	15	8

7. Calculate Mean deviation.

C.I	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
F	8	10	12	15	10	7	8	5

8. Calculate Bowley's Skewness

X	6	12	18	24	20	16	6
F	4	7	9	18	15	10	5

9. Calculate Arithmetic Mean.

C.I	10-20	20-30	30-40	40-50	50-60	60-70	70-80
F	5	9	18	27	12	15	17

10. Calculate Karl Pearson's coefficient of correlation from the following.

A	44	80	76	48	52	72	68	56	60
B	48	75	54	60	63	69	72	51	57

11. What is Time Series Explain the Components of Time Series?

12. From the following data given Find fishers Index Number.

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	6	50	10	56
B	2	100	2	120
C	4	60	6	60
D	10	30	12	24
E	8	40	12	36

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU*  
(AUTONOMOUS)  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CBS-303G/C</i>	<i>2021-2022</i>	<i>II.B.Com(gen/comp)</i>
-----------------	-------------------	------------------	---------------------------

*SEMESTER –III*

Business Statistics

Guidelines to the paper setter

Marks	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Introduction to Statistics	Measures of Central Tendency	Measures of dispersion and Skewness	Measures of Relation	Analysis of Time Series & Index Numbers
5Marks	1	1	1	1	0
15Marks	1T	2P	2P	1P	1T+1P
Weight age	20	35	35	20	30

<i>Commerce</i>	<b>CM 304 G</b>	<i>2021-2022</i>	<i>II.B.Com(gen)</i>
-----------------	-----------------	------------------	----------------------

*SEMESTER –III*

**Marketing**

**Objective:** 1.To acquire knowledge on marketing concepts, 4P's, to build applicable skills through variety internship opportunities

2. Student will gain understanding of consumer buyer behaviour, pricing strategies and ethical concept of marketing

**COURSE OUTCOMES**

CO1: To introduce the concepts of marketing and understand the factors influence the market environment.

C02: Analyze the consumer market models and enlightens consumer buyer behaviour models.

C03: Understand the concept of product and identify the need of product mix and product line decisions.

C04: Develop an idea about pricing strategies and pricing decisions.

C05: Enhance the students about decisions regarding promotion and distribution channels.

Commerce	CM 304 G	2021-2022	H.B.Com(gen)
----------	----------	-----------	--------------

*SEMESTER –III*

*SYLLABUS*

**Marketing**

**Unit-I: Introduction:** Concepts of Marketing: Need, Wants and Demand -Marketing Concepts – Marketing Mix - 4 P's of Marketing – Marketing Environment.

**Unit-II: Consumer Behaviour and Market Segmentation:** Buying DecisionProcess – Stages – Buying Behaviour – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation

**Unit-III: Product Management:** Product Classification – Levels of Product -Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labelling.

**Unit-IV: Pricing Decision:** Factors Influencing Price – Determination of Price - Pricing Strategies: Skimming and Penetration Pricing.

**Unit-V: Promotion and Distribution:** Promotion Mix - Advertising - Salespromotion - Publicity – Public Relations - Personal Selling and Direct Marketing - Distribution Channels – Online Marketing

References:

1. Philip Kotler, Marketing Management, Prentice Hall of India.
2. Philip Kotler & Gary Armstrong, Principles of Marketing, Pearson PrenticeHall
3. Stanton J. William & Charles Futrel, Fundamentals of Marketing, McGrawHill Company

<i>Commerce</i>	<i>CM 304G</i>	<i>2021-2022</i>	<i>II..B.Com(gen)</i>
-----------------	----------------	------------------	-----------------------

*SEMESTER –III*

*Model paper*

Marketing

Time: 3 hrs

Max. Marks: 70

SECTION- A

I. Answer any TWO of the following questions 2x 5= 10M

1. Selling Concept
2. What is Consumer behavior
3. What is New Product
4. Online Marketing

SECTION- B

II. Answer any FOUR of the following questions 4 x 15 = 60M

5. Describe 4P's of Marketing
6. What are the Different Concepts of Marketing
7. What is Market Segmentation?
8. Describe Product Life Cycle.
9. What are the Factor Influencing Price Determination
10. What are the differences Between Personal selling and Direct Marketing?
11. Advantages and disadvantages Packaging and labelling
12. Types of Distribution channels

<i>Commerce</i>	<i>CM 304 G</i>	<i>2021-2022</i>	<i>II..B.Com(gen)</i>
-----------------	-----------------	------------------	-----------------------

*SEMESTER-III*

Guidelines to the paper setter

Marketing

Marks	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Introduction	Consumer Markets and buyer Behavior	Product Management	Pricing decision	Promotion and Distribution
5Marks	1	1	1	--	1
15Marks	2	1	2	1	2
Weightage	35	20	35	15	35

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU*  
(AUTONOMOUS)  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CBL-501(U)</i>	<i>2021-2022</i>	<i>III B.Com(gen/comp)</i>
-----------------	-------------------	------------------	----------------------------

*SEMESTER –V*

*SYLLABUS*

Business Leadership

**Unit-I: Introductory: Leadership** - Traits, Skills and Styles- LeadershipDevelopment - Qualities of a Good Leader.

**Unit-II: Decision-Making and Leadership:** Leadership for Sustainability - Power, Influence, Impact - Leadership Practices - Organizations and Groups: Organizational Culture and Leadership - Leadership in Business Organizations

**Unit-III: Special Topics:** Profiles of a few Inspirational Leaders in Business –Jemshedji Tata - Aditya Birla - Swaraj Paul - L N Mittal - N R Narayana Murthy - Azim Premji, etc.

References:

1. Northouse, Peter G., Leadership: Theory and Practice, Sage Publications.
2. Daloz Parks, S., Leadership can be taught: A Bold Approach for a Complex World, Boston: Harvard Business School Press.
3. Drucker Foundation (Ed.), Leading Beyond the Walls, San Francisco: Jossey Bass.
4. Al Gini and Ronald M. Green, Virtues of Outstanding Leaders: Leadership and Character, John Wiley & Sons Inc.
5. S Balasubramanian, The Art of Business Leadership – Indian Experiences, Sage Publications



*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYURU*  
(AUTONOMOUS)  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CBL-501(U)</i>	<i>2021-2022</i>	<i>III B.Com(gen/comp)</i>
-----------------	-------------------	------------------	----------------------------

*SEMESTER –V*

*Model paper*

Business Leadership

Time: 2 hrs

Max. Marks: 50

SECTION- A

I. Answer any FOUR of the following questions

4 x 5= 20M

1. Leadership
2. Trait
3. Power
4. Influence
5. Aditya Birla
6. Azim Premji

SECTION- B

II. Answer any THREE of the following questions

3 x 10 = 30M

7. Explain the qualities of Good leader
8. Explain Different types of leader ship Practices
9. Explain the leadership in Business Organizations
10. Explain the Profiles of Jemshedji Tata
11. Explain the different Styles of Leadership
12. Explain the Profiles of Narayana Murthy

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU*  
*(AUTONOMOUS)*  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CBL-501(U) G/C C</i>	<i>2021-2022</i>	<i>III B.Com(gen/comp)</i>
-----------------	-------------------------	------------------	----------------------------

*SEMESTER –V*

Business Leadership

Guidelines to the paper setter

	UNIT-I	UNIT-II	UNIT-III
	Introduction	Decision making and Leadership	Special Topics
5 Marks questions	2	2	2
10 Marks questions	2	2	2
Weight age	30	30	30

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU*  
(AUTONOMOUS)

(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION VIJAYAWADA)

<i>Commerce</i>	<i>CCOA-502 G/C C</i>	<i>2021-2022</i>	<i>III B.Com(gen/comp)</i>
-----------------	-----------------------	------------------	----------------------------

*SEMESTER –V*

*SYLLABUS*

Cost Accounting

Unit-I: Introduction: Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.

Unit-II: Elements of Cost: Materials: Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, Base stock methods, choice of method (including problems).

Unit-III: Labour and Overheads: Labour: Control of labour costs – time keeping and time booking – Idle time – Methods of remuneration – labour incentives schemes - Overheads: Allocation and apportionment of overheads – Machine hour rate.

Unit-IV: Methods of Costing: Job costing – Process costing - treatment of normal and abnormal process losses – preparation of process cost accounts – treatment of waste and scrap, joint products and by products (including problems).

Unit -V: Costing Techniques: Marginal Costing – Standard costing – Variance Analysis (including problems).

References:

1. S.P. Jain and K.L. Narang – Advanced Cost Accounting, Kalyani Publishers, Ludhiana.
2. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
3. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
4. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
5. S.N .Maheswari – Principles of Management Accounting.
6. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.

Commerce	CCOA-502G/C C	2021-2022	B.Com(gen/comp)
----------	---------------	-----------	-----------------

*SEMESTER –V*

Model paper

Cost Accounting

TIME -3hrs

SECTION-A

Max. Marks: 70

I. Answer any TWO of the following:

2x5=10M

1. Define Cost Accounting? Explain its Advantages.
2. Explain about FIFO Method.
3. What are the essential features of a good wage system?
4. Explain about BEP Analysis.

SECTION-B

II. Answer any FOUR of the following:

4x15=60M

5. Distinguish between cost accounting and financial accounting
6. From the following particulars you are required to prepare a cost sheet for the year ending 31.12.2009.

Rs.

Stock of finished goods 31-12-2008	72,800.
Stock of raw materials on 31-12-2008	33,280.
Purchase of raw materials	7,59,200.
Wages	5,16,880.
Sales	15,39,200.
Stock of finished goods on 31-12-2009	78,000.
Stock of Raw materials on 31-12-2009	35,360
Works overhead charges	1,29,220
Office overheads	70,161

The company is intending to send a quotation for a large plant. The estimated material cost is Rs. 52,000 and wages Rs. 31,200. The quotation is to make a profit of 20% on selling price. Show the amount of quotation price.

7. X Ltd has purchased and issued the material in the following order

Jan	1	Purchased	300 units @Rs.3/-per units
	4	purchased	600 <u>units@Rs.4/-per</u> units
	6	Issue	500 units
	10	Purchased	700 <u>units@Rs.4/</u> per units
	15	Issue	800 units
	20.	purchased	300 units @Rs.5/per units
	23.	issue	100 units

Ascertain the quantity of closing stock as on 31<sup>st</sup> January and state what will be its value (in each case) if issues are made under the First in first out method:

8. From the following information relating to a worker. Calculate which of the following methods of wage payment is beneficial to the worker:

- (a) Time rate
- (b) Piece rate
- (c) Halsey plan.
  - (I) Standard Time in a week 45 hrs
  - (ii) Standard weekly production 450 units.
  - (III) Actual time taken by the worker 40hrs.
  - (Iv) Piece rate Rs.2 per units
  - (v) Hourly rate Rs.25.

9. Product x is obtained after it is processed through three distinct process. The following cost information is available for the operations:

particulars	Total	I	II	III
Material	5,625	2,600	2,000	1,025
Direct wages	7,330	2,250	3,680	1,400
Production over heads	7,330	–	–	–

500 units at Rs.4per unit were introduced in process .production over head to be distributed at 100% on Direct wages

The actual output and normal loss of the respective processes are:

	Output unit	Normal loss on input	Value of scrap per unit
Process-I	450	10%	Rs.2
Process-II	340	20%	Rs.4
Process-III	270	25%	Rs.5

There is no stock or work-in-progress in any process.

Prepare process accounts.

10. From the following information pertaining to the two years, calculate.

(a) P/V ratio

(b) Amount of sales to earn profit of Rs40,000

(c) profit on sales Rs.1,20,000.

Years	Sales	Profit
1996	1,40,000	15,000
1997	1,60,000	20,000

11. You are required to calculate from the following data:

(a) Material price variance

(b) Material cost variance

(c) Material usage variance

Standard material cost to produce one tone of chemical "P" is

500 kg of material X @Rs.15 per kg.

750 kg of material Y @Rs.10 per kg.

1000 kg of material Z @Rs.12 per kg.

During the period 100 tons of Chemical P wear produced from the usage of

6000 kg of material X@Rs.14 per kg.

8000 kg material Y @Rs .12 per kg.

10,500 kg materialZ@Rs.15 per kg.

12. The Costing records of Gopi Engineering Company for job 777 reveals Materials Rs 6,015

Wages: Dept .X : 100 Hours @ Rs 4.50 per hour

Dept .Y : 65 Hours @ Rs 3.00 per hour

Dept .Z : 35 Hours @ Rs 7.50 per hour

Over head expenses for these three departments were estimated as follows.

Variable overheads :

Dept .X : Rs 10,000 for 2,500 labour hours

Dept .Y Rs 6,000 for 2,000 labour hours

Dept .Z : Rs 4,000 for 500 labour hours

Fixed overheads: estimated at Rs 40,000 for 10,000 Normal Working Hours .your are required to calculate the cost of job No 777.

Commerce	CCOA-502G/C C	2021-2022	B.Com(gen/comp)
----------	---------------	-----------	-----------------

Cost Accounting

SEMESTER –V

Guidelines to the paper setter

	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Introduction	Elements of Cost	Labour and Over heads	Methods of Costing	Costing Techniques
5 Marks questions	1	1	1	0	1
15 Marks questions	2(1T+1P)	1	1	2	2
Weight age	35	20	20	30	35

<i>Commerce</i>	<i>CTAX-503C C</i>	<i>2021-2022</i>	<i>III.B.Com(comp)</i>
-----------------	--------------------	------------------	------------------------

*SEMESTER –V*

*TAXATION*  
*SYLLABUS*

Unit-I: Introduction: Objectives - Principles of Taxation - Brief History - Basic Concepts; Capital and Revenue; Basis of Charge - Exempted Incomes - Residential Status – Incidence of Taxation.

Unit-II: Direct and Indirect Taxes – Service Tax – VAT – Central Sales Tax – Latest Developments.

Unit-III: Computation of income under different heads: Income from Salary; Income from House Property; Deductions u/s 80C to 80U - Income from Capital Gains; Income from Other Sources (simple problems).

Unit-IV: Taxation System in India: Objectives; Tax Holiday; Modes of Tax Recovery (Section 190 and 202); Payments and Refunds; Filing of Returns.

Unit-V: Tax Planning: Tax Avoidance and Tax Evasion; Penalties and Prosecutions; Income Tax Authorities.

References:

1. Vinod K. Singhania Direct Taxes - Law and Practice, Taxman Publication.
2. B.B. Lal: Direct Taxes, Konark Publisher (P) Ltd.
3. Bhagwati Prasad: Direct Taxes – Law and Practice, Wishwa Prakashan.
4. Dr. Mehrotra and Goyal: Direct Taxes – Law and Practice, Sahitya Bhavan Publication.



Commerce	CTAX-503C C	2021-2022	III.B.Com(comp)
----------	-------------	-----------	-----------------

SEMESTER –V

*TAXATION*  
Model Question Paper

Time: 3 Hrs

Max. Marks: 70

SECTION – A

I. Answer any TWO of the following

2X 5 = 10M

1. Explain the principle of Taxation
2. What is VAT
3. U/S 80c
4. Tax Evasion

SECTION – B

II. Answer any Four of the following

4 x15 =60M

5. Give 10 Examples of Incomes Exempted u/s 10.
6. What is Service tax ? Explain different taxable service
7. From the following particulars of sriram, a manger of a firm, compute his taxableincome from salary for the A. Y 2017-18
  - a) Basic pay Rs 6000 P.M
  - b) Dearness allowance Rs 400 P.M
  - c) Own contribution to R.P.F Rs 3000 P.M
  - d)Employee’s contribution to R.P.F Rs 3000 P.M
  - e) Interested credited to R.P.F 13% P.A Rs 4680
  - f) House rent allowance Rs 7200P.M rent paid in Delhi Rs5000 P.M
  - g) Medical allowance Rs100 P.M
  - h) Entertainment allowance Rs. 300 P.M

8. Compute income from House property for the assessment year 2016-17

Municipal valuation 16,000 P A. Fair rent 1,80,000 P.A ,Standard rent 1,50,000 P.A , Rentreceived 1,72,000 P A Municipal taxes 10% Municipal taxes are borne by the owner. Fireinsurance Rs 3000, Interest on money borrowed for construction of House property paid Rs .36, 000 The House is let-out throughout the previous year.

9. Mr. Prasad submits the following particulars about sale of assets during 2016-17.

<u>Particulars</u>	<u>Jewellery</u>	<u>Plot</u>	<u>Gold</u>
Sale Price	12, 00,000	50, 80,000	10,20,000
Expenses on sale	10,000	36,000	Nil
Cost of Acquisition	90,000	4, 20,000	1,30,000
Year of Acquisition	1989-90	1986-87	2003-04
CII	172	140	463

He has purchased a house for Rs.27, 00,000 on 1-3-2020.

Calculate the amount of taxable capital gain. CII for 2021-2022 is: 317

10 .Explain the Modes of Tax Recovery

11. Difference between Tax Planning and Tax Evasion

12. Mention the different Kinds of Incomes Specifically mentioned as Chargeable to tax under the head "Income from Other Sources

<i>Commerce</i>	<i>CTAX-503C C</i>	<i>2021-2022</i>	<i>III.B.Com(comp)</i>
-----------------	--------------------	------------------	------------------------

*SEMESTER –V*

*TAXATION*  
Guidelines to the paper setter

Marks	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Introduction	Direct and Indirect taxes	Computation of income under different heads	Taxation System in India	Tax Planning
5Marks	1	1	1	0	1
15Marks	1T	1T	3P+1T	1T	1T
Weight age	20	20	65	15	20

Commerce	CGST-503G/C	2021-2022	III.B.Com(gen)
----------	-------------	-----------	----------------

SEMESTER –V

GOODS &SERVICE TAX FUNDAMENTALS

SYLLABUS

GOODS &SERVICE TAX FUNDAMENTALS

Unit I: Introduction: Overview of GST - Concepts – Limitations of VAT – Need for Tax Reforms - Justification for introduction of GST - Shortcomings and advantages at the Central Level and State Level on introduction of GST- Process of Introduction of GST - Constitutional Amendments.

Unit II: GST:Principles – Models of GST: Australian, Canadian, Kelkar-Shah – BagchiPoddar -Comprehensive structure of GST model in India: Single, Dual GST– Transactions covered under GST.

Unit-III:Taxes and Duties: Subsumed under GST - Taxes and Duties outside the purview of GST: Tax on items containing Alcohol – Tax on Petroleum products - Tax on Tobacco products - Taxation of Services

Unit-IV: Inter-State Goods and Services Tax: Major advantages of IGST Model – Interstate Goods and Service Tax: Transactions within a State under GST – Interstate Transactions under GST - Illustrations.

Unit-V: Time of Supply of Goods & Services: Value of Supply - Input Tax Credit – Distribution of Credit -Matching of Input Tax Credit - Availability of credit in special circumstances- Cross utilization of ITC between the Central GST and the State GST.

References:

1. Goods and Services Tax in India – Notifications on different dates.
2. GST Bill 2012.
3. Background Material on Model GST Law, Sahitya Bhawan Publications, Hospital Road, Agra - 282 003.
4. The Central Goods and Services Tax Act, 2017, NO. 12 OF 2017 Published by Authority, Ministry of Law and Justice, New Delhi, the 12th April, 2017.

Commerce	CGST-503G/C	2021-2022	III.B.Com(gen)
----------	-------------	-----------	----------------

SEMESTER –V                      GOODS &SERVICE TAX FUNDAMENTALS

MODEL PAPER

TIME -3hrs

Max. Marks: 70

SECTION-A

I. Answer any TWO of the following

2x5=10M

1. What is GST?
2. Dual GST
3. Subsumed under GST
4. Central GST

SECTION-B

II. Answer any FOUR of the following

4x15=60M

5. What are the advantages of Goods and Services Tax
6. What is the Comprehensive Structure of GST in India?
7. Write about Australian Model of GST
8. Explain the Taxes and Duties outside the Purview of GST
9. What are the advantages of IGST?
10. Explain about interstate transactions under GST
11. What is Time supply of goods and services?
12. What is input tax credit and explain it with suitable examples.

<i>Commerce</i>	CGST-503G/C	2021-2022	<i>III.B.Com(gen)</i>
-----------------	-------------	-----------	-----------------------

GOODS & SERVICE TAX FUNDAMENTALS

*SEMESTER –V*

Guidelines to the paper setter

Marks	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Inrtoduction	GST:Princip les	Taxes and Duties	Inter-State Goods and Services Tax	Time of Supply of Goods & Services
5Marks	1	1	1	0	1
15Marks	1	2	1	2	2
Weight age	20	35	20	30	35

<i>Commerce</i>	<i>CCG-504G/C C</i>	<i>2021-2022</i>	<i>III.B.Com(gen/comp)</i>
-----------------	---------------------	------------------	----------------------------

*SEMESTER-V*

*SYLLABUS*

Commercial Geography

Unit -I: The Earth: Internal structure of the Earth – Latitude – Longitude – Realms of the Earth – Evolution of the Earth – Environmental pollution - Global Warming - Measures to be taken to protect the Earth.

Unit -II: India – Agriculture: Land Use - Soils - Major crops – Food and Non-food Crops – Importance of Agriculture – Problems in Agriculture – Agriculture Development.

Unit -III: India – Forestry: Forests – Status of Forests in Andhra Pradesh – Forest (Conservation) Act, 1980 – Compensatory Afforestation Fund (CAF) Bill, 2015 - Forest Rights Act, 2006 and its Relevance – Need for protection of Forestry.

Unit -IV: India – Minerals and Mining: Minerals – Renewable and non Renewable – Use of Minerals – Mines – Coal, Barites, etc. – Singareni Coal mines and Mangampeta Barites – Districtwise Profile.

Unit-V: India – Water Resources – Rivers: Water resources - Rationality and equitable use of water – Protection measures - Rivers - Perennial and peninsular Rivers - Interlinking of Rivers - Experience of India and Andhra Pradesh.

References:

1. Shabiar Ahmad; Quazi, Natural Resource Consumption and Environment Management, APH Publishing Corporation.
2. Tarachand, Economic and Commercial Geography of India, Vikas Publishing House.
3. Dr. S. Sankaran, Commercial Geography, Margam Publications, Chennai.
4. C. B. Memoria, Commercial Geography, Lal Agarwal & Co.

Commerce	CCG-504G/C C	2021-2022	III.B.Com(gen/comp)
----------	--------------	-----------	---------------------

SEMESTER –V

*Model paper*

Commercial Geography

Time: 3 hrs

Max. Marks: 70

SECTION- A

I. Answer any Two of the following questions

2 x 5= 10M

1. Global warming
2. Non-food crops
3. Singareni Coal Mines
4. Krishna River

SECTION- B

II. Answer any FOUR of the following questions

4 x 15 = 60M

5. Explain the internal structure of the Earth
6. What are the measures to be taken to protect the Earth
7. Explain about different types of soils.
8. Explain forest conservation Act 1980.
9. Describe the need for protection of forests
10. Explain renewable and non renewable minerals
11. Explain the importance of interlinking of rivers
12. What are the problems facing by the farmers in India?



<i>Commerce</i>	<i>CCG-504G/C C</i>	<i>2021-2022</i>	<i>III.B.Com(gen/comp)</i>
-----------------	---------------------	------------------	----------------------------

*SEMESTER –V*

Commercial Geography

Guidelines to the paper setter

	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	The Earth	India-Agriculture	India-Forestry	India-Minerals and Mining	India-Water resources-Rivers
5 Marks questions	1	1	0	1	1
15 Marks questions	2	2	2	1	1
Weight age	35	35	30	20	20

<i>Commerce</i>	<i>CCB 505CE G/C</i>	<i>2021-2022</i>	<i>III.B.Com(gen)</i>
-----------------	----------------------	------------------	-----------------------

*SEMESTER –V*

*SYLLABUS*

Central Banking

Unit-I: Introduction: Evolution and Functions of Central Bank - Development of Central Banks in Developed and Developing countries - Trends in Central Bank Functions.

Unit-II: Central banking in India: Reserve Bank of India - Constitution and Governance, Recent Developments, RBI Act. - Interface between RBI and Banks.

Unit-III: Monetary and Credit Policies: Monetary policy statements of RBI - CRR - SLR -Repo Rates - Reverse Repo Rates - Currency in circulation - Credit control measures.

Unit-IV: Inflation and price control by RBI: Intervention mechanisms - Exchange rate stability - Rupee value - Controlling measures.

Unit-V: Supervision and Regulation: Supervision of Banks - Basle Norms, Prudential Norms, Effect of liberalization and Globalization - Checking of money laundering and frauds.

References:

1. Reserve Bank of India Publication, Functions and Working of the RBI.
2. Vasant Desai, Central Banking and Economic Development, Himalaya Publishing.
3. S. Panandikar, Banking in India, Orient Longman.
4. Reserve Bank of India Publication, Report on Trends and Progress of Banking in India.
5. Annual Reports of Reserve Bank of India.
6. Rita Swami, Indian Banking System, International Publishing House Pt. Ltd..

<i>Commerce</i>	<i>CCB 505CE G/C</i>	<i>2021-2022</i>	<i>III.B.Com(gen)</i>
-----------------	----------------------	------------------	-----------------------

*SEMESTER –V*

*Model paper*

Central Banking

Time: 3 hrs

Max. Marks: 70

SECTION- A

I. Answer any TWO of the following questions 2 x 5= 10M

1. Evolution of Central Bank
2. RBI Act 1934
3. Statutory liquidity Ratio
4. Exchange Rate

SECTION- B

II. Answer any FOUR of the following questions 4 x 15 = 60M

5. Describe the functions Central Bank.
6. Explain the differences between RBI and Commercial banks
7. State the Role of RBI in Economic Development
8. What are the various weapons of credit control available to RBI
9. What is Cash Reserve Ratio? Explain its importance
10. Bring out Clearly the Exchange Control Function of the RBI
11. Explain Basle Norms and Prudential Norms.
12. Explain the Checking of Money laundering and frauds.

<i>Commerce</i>	<i>CCB 505CE G/C</i>	<i>2021-2022</i>	<i>III.B.Com(gen)</i>
-----------------	----------------------	------------------	-----------------------

*SEMESTER –V*

Guidelines to the paper setter

Central Banking

Marks	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Introduction	Central banking in India	Monetary and Credit policies	Inflation and price control by RBI	Supervision and Regulation
5Marks	1	1	1	1	0
15Marks	1	2	2	1	2
Weight age	20	35	35	20	30

<i>Commerce</i>	<i>CRC-506 CE G/C</i>	<i>2021-2022</i>	<i>III.B.Com(gen)</i>
-----------------	-----------------------	------------------	-----------------------

*SEMESTER –V*

*SYLLABUS*

Rural and Farm Credit

Unit-I: Rural Credit: Objectives and Significance of Rural credit - Classification of rural credit - General Credit Card (GCC) – Financial Inclusion - Rupay Card.

Unit-II: Rural Credit Agencies: Institutional and Non-institutional Agencies for financing agriculture and Rural development - Self-Help Groups (SHG) - Financing for Rural Industries.

Unit-III: Farm Credit: Scope - Importance of farm credit - Principles of Farm Credit -Types-Cost of Credit - - problems and remedial measures - Kisan Credit Card (KCC) Scheme.

Unit-IV: Sources of Farm Credit: Cooperative Credit: PACS - APCOB - NABARD SLBC-Lead Bank Scheme - Role of Commercial and Regional Rural Banks - Problems of recovery and over dues.

Unit-V: Farm Credit Analysis: Eligibility Conditions - Analysis of 3 R's (Return, Repayment Capacity and Risk-bearing Capacity) - Analysis of 3 C's of Credit (Character, Capacity and Capital) - Crop index reflecting use and farm credit - Rural Credit Survey Reports..

References:

1. National Bank of Agricultural and Rural Development (NABARD) Annual report.
2. Economic Survey, Government of India.
3. Rural Development, Sundaram I.S., Himalaya Publishing House, Mumbai.
4. Rural Credit in India, C.S.Rayudu, Mittal Publications.
5. Farm Credit and Co-operatives in India, Tiruloati V., Naidu. V T Naidu, Vora & Co. Pub.Ltd.

Project Work: Rural Credit survey/Banking operations/Credit Appraisal

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYURU*  
(AUTONOMOUS)  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CRC-506 CE G/C</i>	<i>2021-2022</i>	<i>III.B.Com(gen)</i>
-----------------	-----------------------	------------------	-----------------------

*SEMESTER –V*  
*Model paper*

Rural and Farm Credit

Time: 3 hrs

Max. Marks: 70

SECTION- A

I. Answer any TWO of the following questions

2x 5= 10M

1. Rural Credit
2. Self Help Groups
3. Kisan Credit Card
4. Repayment Capacity

SECTION- B

II. Answer any FOUR of the following questions

4 x 15 = 60M

5. Describe the significance of Rural Credit
6. Explain Classification of Rural Credit
7. What are Institutional agencies for Financing Agricultural?
8. Explain advantages and disadvantages of Self-Help Groups
9. Explain the principles of Farm Credit
10. Write about NABARD
11. Explain the role of Regional Rural Banks in Farm Credit
12. What is the Analysis of 3C'S of Credit?

*AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYURU*  
(AUTONOMOUS)  
(MANAGED BY SIDDHARTHA ACADEMY OF GENERAL & TECHNICAL EDUCATION  
VIJAYAWADA)

<i>Commerce</i>	<i>CRC-506 CE G/C</i>	<i>2021-2022</i>	<i>III.B.Com(gen)</i>
-----------------	-----------------------	------------------	-----------------------

*SEMESTER –V*

Guidelines to the paper setter

Rural and Farm Credit

Marks	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
	Rural Credit	Rural Credit Agencies	Farm Credit	Sources of Farm Credit	Farm Credit Analysis
5Marks	1	1	1	0	1
15Marks	2	2	1	2	1
Weight age	35	35	20	30	20

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF COMPUTER SCIENCE**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

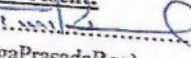

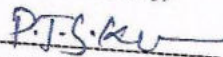
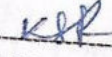
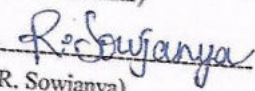
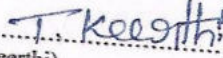
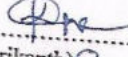
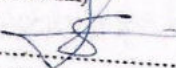
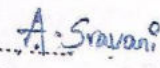
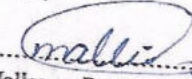
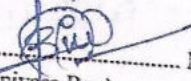
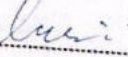
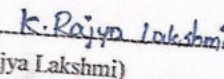
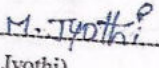
**10-11-2021**



Minutes of the meeting of Board of Studies in Computer Science for Semester I, III & V of I, II & III years B.Sc. (MPCs, MCCs, MSCs), B.Com. (C.A.) and B.Com (e-Commerce) Life Skill Course and Skill Development Course of AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru, held at 9.30 A.M on 10-11-2021 in the Department of Computer Science.

Sri T.NagaPrasadaRao ... Presiding

Members Present:

- 1)  Chairman  
(T.NagaPrasadaRao) Head, Department of Computer Science,  
AG & SG Siddhartha Degree College of Arts & Science.
- 2)  University  
(Dr. M. Babu Reddy) Nomine Principal, Krishna University College of Engineering  
and Technology, Machilipatnam.
- 3)  Subject  
(Dr. P. J. S Kumar) Expert Head, Department of Computer Science  
A.N.R College Gudivada.
- 4)  Subject  
(Mr. K. Sridhar) Expert Deputy Head, Department of Computer Science  
PB Siddhartha College of Arts & Science,  
Vijayawada.
- 5)  Industrial  
(R. Sowjanya) Expert .Net Developer, Maven Soft System Pvt. Ltd  
Madaapur, Hyderabad.
- 6)  Member  
(T. Keerthi) Lecturer in Computer Science, AG & SG Siddhartha  
Degree College of Arts & Science, Vuyyuru
- 7)  Member  
(K Srikanth) Lecturer in Computer Science, AG & SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165.
- 8)  Member  
(S. Prabhavathi) Lecturer in Computer Science, AG & SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165
- 9)  Member  
(A. Sravani) Lecturer in Computer Science, AG & SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165
- 10)  Member  
(V.N. Malleswara Rao) Lecturer in Computer Science, AG & SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165
- 11)  Member  
(A. Naga Srinivasa Rao) Lecturer in Computer Science, AG & SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165
- 12)  Member  
(V. Murni) Lecturer in Computer Science, AG & SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165
- 13)  Member  
(K. Rajya Lakshmi) Student in M.Sc. Computer Science, AG& SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165
- 14)  Member  
(M. Jyothi) Student in B.Sc. Computer Science, AG& SG Siddhartha  
Degree College of Arts & Science, Vuyyuru-521165

### **Agenda for B.O.S Meeting.**

1. To Discuss and approve the Structure and Syllabi, Model Question Paper for first Semester of B.Sc.(MPCs, MCCs.MSCs) & B.Com (C.A), B.Com(e-Commerce) Programs for the student are admitted from the Academic Year 2021-22.
2. To Discuss and approve the Structure and Syllabi, Model Question Paper for Third Semester of B.Sc.(MPCs, MCCs.) & B.Com (C.A) Programs for the Academic Year 2021-22.
3. To Discuss and approve the Structure and Syllabi, Model Question Paper for Fifth Semester of B.Sc.(MPCs, MCCs.) & B.Com (C.A) Programs for the Academic Year 2021-22.
4. To recommend any changes in the syllabi for I, III, V Semesters of I, II, III year Degree B.Sc.(MPCs, MCCs, MSCs), B.Com.(C.A.) and B.Com(e-commerce).
5. To Introduce a New Programs for B.Sc (MSCs) and B.Com (e-commerce) from the Academic Year 2021-22.
6. To Introduce a Life Skill Course and Skill Development Course for all B.Sc and B.Com from the Academic Year 2021-22.
7. To recommend the teaching and evaluation methods to be followed under Autonomous status.
8. To recommend the panel of paper setters and examiners to the controller of the examinations of autonomous courses of AG & SG Siddhartha Degree College of Arts & Science College, Vuyyuru.
9. Any other matter

### Resolutions.

- 1) It is Resolved and Recommended to adopt the structure and syllabi and Model Question Papers for first semester of B.Sc.(MPCs, MCCs, MSCs) & B.Com (C.A), B.Com(e-Commerce) Programs under CBCS(Choice Based Credit System) Approved by the Academic Council from the Academic Year 2021-22.
- 2) It is Resolved and Recommended to adopt the structure and syllabi and Model Question Papers for Third semester of B.Sc.(MPCs, MCCs) & B.Com (C.A), Programs under CBCS(Choice Based Credit System) Approved by the Academic Council from the Academic Year 2020-21
- 3) It is Resolved and Recommended to adopt the structure and syllabi and Model Question Papers for fifth semester of B.Sc.(MPCs, MCCs) & B.Com (C.A), Programs under CBCS(Choice Based Credit System) Approved by the Academic Council from the Academic Year 2020-21
- 4) It is Resolved and Recommend any changes in the syllabi for I, III, V Semesters of I, II, III year Degree B.Sc.(MPCs, MCCs, MSCs), B.Com.(C.A.) and B.Com(e-commerce).
  - **It is Resolved and Recommend change Syllabi and Model Question paper as per new regulations in I & III Semester of I & II Year Degree B.Sc. (MPCs, MCCs) and B.Com(CA).**
  - **It is Resolved and recommend NO changes in the syllabi for V Semester of III Year B.Sc. (MPCs, MCCs) & B.Com.(CA).**
  - **It is Resolved and recommend to Value Added Course on ARTIFICIAL INTELLIGENCE Course code AIVAC101 in SEMESTER III for Second Year Students.**
- 5) It is Resolved to implements New Programs for B.Sc (MSCs) and B.Com (e-commerce) from the Academic Year 2021-22.
- 6) It is Resolved to implements Life Skill Course and Skill Development Course for all B.Sc and B.Com from the Academic Year 2021-22.
- 7) It is resolved to continue the teaching and evaluation methods to be followed under Autonomous status.
- 8) It is resolved to continue the panel of paper setters and examiners to the controller of the examinations of autonomous courses of AG & SG Siddhartha Degree College of Arts & Science College, Vuyyuru.
- 9) Any other matter

#### ***Teaching methods:***

Besides the conventional methods of teaching, we use modern technology i.e. Using of LMS and LCD projector to display on power board etc..for better understanding of concepts.

#### ***Evaluation of a student is done by the following procedure:***

There are two components in the Valuation and Assessment of a student – Internal Assessment (IA) Semester Examinations (SE). **For the Batch of Students Admitted from 2021-22.**

#### ***Internal Assessment (IA)***

- The maximum mark for IA is 25 and SE is 75 for theory; and for practical marks for IA 10 and 40 Marks for External Exam.
- Each IA written examination is of 1 hour 30 minutes duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks.

- Other Innovative Components will be for 5 Marks. The innovative component is for 5 marks, conducted during the class hours by the staff member/ in charge of the subject, in the form of assignments/ quiz/ seminars /PPT/Online- assignments/Open Book/Viva Voce/ Group work/ Mini Project/ Exhibition, etc. The topic and time for submission/ presentation will be announced by the staff member/ in charge of the subject in advance. Each student should explain and defend his/her presentation.
- The semester examination will be of 3 hours with maximum 75 marks.
- There are no passing minimum marks for IA.

#### **Internal Assessment (IA)**

- The maximum mark for IA is 30 and SE is 70 for theory; and for practical marks for IA 10 and 40 Marks for External Exam.
- Each IA written examination is of 1 hour 30 minutes duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks.
- Other Innovative Components will be for 5 Marks. The innovative component is for 5 marks, conducted during the class hours by the staff member/ in charge of the subject, in the form of assignments/ quiz/ seminars /PPT/Online- assignments/Open Book/Viva Voce/ Group work/ Mini Project/ Exhibition, etc. The topic and time for submission/ presentation will be announced by the staff member/ in charge of the subject in advance. Each student should explain and defend his/her presentation.
- For attendance 5 Marks are allotted.
- The semester examination will be of 3 hours with maximum 70 marks.
- There are no passing minimum marks for IA.

#### **Semester Examinations (SE)**

- A student should register himself/herself to appear for the Semester Examinations by payment of the prescribed fee.
- The Semester Examinations will be in the form of a comprehensive examination covering the entire syllabus in each subject. It will be of 3 hours duration & Foundation course 2 hours irrespective of the number of credits allotted to it.
- If a candidate fails to obtain pass marks even after the due to less mark in the IA examination, the marks of the next examination will be converted to be out of 100.
- Even though the candidate is absent for two IA exams/obtain zero marks the external marks are considered (if he/she gets 40/70) and the result shall be declared as 'PASS'.
- The maximum marks for each Paper shall be 100.

Question paper guide lines for Practical Examinations at the end of Semesters I, III & V Two Practical Programs to be conducted out of 15 programs at the end of Semester I, III & V Practical Examination time 3Hrs and Maximum Marks 50 Scheme of valuation Semesters – I, III & V B.Sc.& B.Com.(C.A),

#### **Computer Science Practical's - External (Time: 3 hrs.)**

**Total Marks: 25M**

1. Programs Writing (2) :	20 marks,
2. Viva voice :	5 marks
3. Execution & Result :	15 marks

Total Marks : 40

#### **Computer Science Practical's- Internal**

**Total Marks: 10 M**

1. . Record : 10 marks

6.) Discussed and recommended for organizing Seminars, Guest lectures, Work-shops to upgrade the knowledge of students, for the approval of the Academic Council.

7) Discussed and empowered the HOD to suggest the panel of the paper setters and examiners to the controller of the examinations.

8). We implemented online certificate courses such as NPTL, APSSDC - PYTHON, R- Programming, Amazon Web services and JAVA -----etc. To fill the curriculum gaps from II year Degree on words

9). Suggestions

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CSC-501C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCs,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

SEMESTER – V

PAPER – V

Max. Marks 70

**Syllabus: DATA BASE MANAGEMENT SYSTEMS**

NO of Hours: 4

No Of Credits: 3

Pass Marks 28

**Course Objective:** Design & develop database for large volumes & varieties of data with optimized data processing techniques.

**Unit – I: Database Systems Introduction****12Hrs**

**Database Systems:** Introducing the database and DBMS, Why the database is important,

**Historical Roots:** Files and File Systems, Problems with File System, Data Management, **Database Systems.** *Data Models:* The importance of Data models, Data Model Basic Building Blocks, The evaluation of Data Models, Degree of Data Abstraction.

**Unit - II: Relational Database & Data Modelling****12 Hrs**

**The Relational Database Model:** A logical view of Data, Keys, Integrity Rules, Relational Set Operators, The Data Dictionary and the system Catalog, Indexes, Codd's relational database rules

**.Entity Relationship Model:** The ER Model *Advanced Data Modelling:* The Extended Entity Relationship Model, Entity clustering, Entity integrity.

**Unit-III: Normalization and Database Design****14 Hrs**

Data base Tables and Normalization, The need Normalization, The Normalization Process, High level Normal Forms, Normalization and database design, de normalization.

**Database Design:** The Information System, The Systems Development Life Cycle, The Database Life Cycle, Centralized Vs Decentralized design.

**Unit-IV: Structured Query Language****12 Hrs**

**Introduction to SQL:** Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators, Sub queries and correlated queries, SQL Functions.

**Unit-V: Procedural SQL****10Hrs**

Introduction to PL/SQL: Triggers, Stored Procedures, Pl/ SQL Stored Functions

**Prescribed Text Book:**

Peter Rob, Carlos Coronel, Database Systems Design, Implementation and Management, Seventh Edition, Thomson (2007).

Reference Books:

Elimasri / Navathe, Fundamentals of Database Systems, Fifth Edition, Pearson Addison Wesley 2. Raman A Mata – Toledo/Panline K Cushman, Database Management Systems, .

C.J.Date, Arkansan, S.Swamynathan, An Introduction to Database Systems, Eight edition,

“DatabaseSystemConcepts” by AbrahamSilberschatz, Henry Korth, and S.Sudarshan,

Atul Kahate, Introduction to Database Management Systems, Pearson Education (2006).

Student Activity: 1. Create your college database for placement purpose. 2. Create faculty database of your college with their academic performance scores

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CSC-501C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCs,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

**SEMESTER – V**

**PAPER – V**

**Max. Marks 70**

**Model Paper: DATA BASE MANAGEMENT SYSTEMS**

**NO of Hours: 4**

**No Of Credits: 3**

**Pass Marks 28**

**Section-A**

Answer any **FOUR** Questions. Each question carries **FIVE** Marks

**4x5=20M**

1. Explain the Components of Database System?
2. Explain Relational Data Model?
3. Write about Relational Set Operators?
4. Describe BCNF?
5. Write about Special Functions?
6. Explain Stored Procedures?

**Section-B**

Answer any **FIVE** Questions. Each question carries **TEN** Marks

**5X10=50M**

7. What is File? Explain the problems with File system
8. Explain the Degree of Data Abstraction
9. Explain E.F.CODDs' rules.
10. Explain Extended Entity Relationship Model
11. Explain the concept of Normal Forms
12. Explain about SDLC.
13. Explain DDL and DML commands.
14. Explain about triggers.

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

COMPUTER SCIENCE	CSC-501C	2021-'22	B.Sc.(MPCs,MCCs)
------------------	----------	----------	------------------

SEMESTER – V PAPER – V Max. Marks 70 Pass Marks 28

Guidelines for paper setting '**DATA BASE MANAGEMENT SYSTEMS**'

Unit wise weight age of Marks

	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1	2	2
Unit-2	1	2
Unit-3	1	2
Unit-4	1	1
Unit-5	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weight age given by us

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college within the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year 2020-21)

<b>COMPUTER SCIENCE</b>	<b>CSC-501P</b>	<b>2021-'22</b>	<b>B.Sc.(MPCS,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

**SEMESTER – V**

**PAPER – V**

**Max. Marks 50**

**Lab List DATA BASE MANAGEMENT SYSTEMS**

**Pass Marks 25**

**No. of Hours per week: 2**

**External: 25**

**Internal: 25**

**Credits: 2**

1. Creation of college database and establish relationships between tables
2. Explain various data type in Oracle.
3. Show the structure of the Emp table.
4. Show the structure of the DEPT table.
5. Explain the syntax of SELECT statement.
6. Create a query to display the name, job, hire date and employee number from emp table.
7. Create a query to display unique jobs from the emp table.
8. Create a query to display the empno as EMP#, ename as EMPLOYEE and Hire date from emp.
9. Create a query to display all the data from the EMP table. Separate each column by a comma and name the column THE\_OUTPUT.
10. Create a query to display the name and salary of employees earning more than 2850.
11. Create a query to display the name and salary for all employees whose salary is not in the range of 1500 and 2850.
12. Display the employee name, job and start date of employees hired between February 20 ,1981 and May 1, 1981. Order the query in ascending order of start date
13. Display the employee name and department number of all the employees in departments 10 and 30 in alphabetical order by name.
14. List the name and salary of employees who earn more than 1500 & are in department 10 or 30.
15. Display the name, salary and commissions and sort data in descending order of salary and commission.
16. Display the name and job title of all employees who do not have a manager.
17. Display the name, job and salary for all employees whose job is Clerk or Analyst and their salary is not equal to 1000, 3000 or 5000.
18. Display the names of all employees where the third letter of their name is an 'A'.
19. Display the names of all employees who have two 'L's in their name and are in department 30 or their manager is 7782.
20. Display the name , salary and commission for all employees whose commission amount is grater than their salary increased by 10%.
21. Explain all the character functions.
22. Explain all the number functions.
23. Explain all the Date functions.
24. Explain different types of JOIN.
25. Write a query to display the name, department number and department name for all employees.
26. Create a unique listing of all jobs that are in department 30. and include the location of department 30 in the output.
27. Write a query to display the employee name, department name and location of all employees who earn a commission.
28. Write a query to display the name, job department number and department name for all employees who work in 'DALLAS'.
29. Create a query to display the name and hire date of any employee hired after employee BLAKE.



30. . Display all employees names and hire dates along with their manager's name and hire date for all employees who were hired before their managers.
  31. Create your own users and give permissions to you and explain GRANT and REVOKE Commands.
- A. Create MOVIE database using the following tables.

MOVIE:Movie no: primary key, varchar2  
 Movie name: NOT NULL, varchar2  
 Movie Type: varchar2  
 Star: Varchar2

CUSTOMER: Customer No: primary key, varchar2  
 Customer Name: NOT NULL, varchar2  
 Address: NOT NULL  
 Phone no: Number  
 INVOICE: Invoice no: Varchar2, primary key  
 Movie no: foreign key  
 Customer no: foreign key  
 Price: NOT NULL, Number

Queries:

1. List the movie names that starts with 'p'
2. List the number of the movies those price ranges from 15000 and 20000
3. List the customers who have phone numbers.
4. List the customers who have no phone numbers.
5. Display the following string
  - (a) A Customer "customer number" has bought the "movie number" "movie name" with "Price"
6. List the customers by calculating price as  $(price * tax) / 100$  where  $tax = 0.5$  and rename the column as 'tax'.
7. List the movies, which are owned by 2 customers.
8. List the customers, who bought 2 picture names.
9. List the customers, who are not the range of 15000 and 20000.

B. Create Student database using the following tables.

STUDENT: Sno : primary key, number  
 Sname : NOT NULL, varchar2  
 Address: Varchar2

COURSE:Sno : Foreign key.  
 Course Name : varchar2

Queries:

1. Alter table by adding a column fees in table COURSE.
2. Alter table by modifying the address to VARCHAR2(20)
3. Create a view on which the students who joined in one course only.

**PL/SQL.**

1. Write A Pl/Sql Program To Swap Two Numbers Without Using Third Variable.
2. Write A Pl/Sql Program To Generate Multiplication Tables For Numbers 2,4 And 6
3. Write A Pl/Sql Program To Display Sum Of Even Numbers And Sum Of Odd Numbers In The Given Range.
4. Write A Pl/Sql Program To Check The Given Number Is Pollinndrome Or Not.
5. Write A Pl/Sql Program To Display Top 10 Rows In Emp Table Based On Their Job And Salary.
6. Write A Procedure Update The Salary Of Employee, Who is Not Getting Commission by 10%.

**Reference Books:**

1. Oracle Pl/Sql By Example. Benjamin Rosenzweig, Elena Silvestrova, Pearsoneducation 3rd Edition
2. Sql& Pl/Sql For Oracle 10g, Black Book, Dr.P.S. Deshpande

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CSC-502C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCs,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

**SEMESTER – V**

**PAPER – VI**

**Max. Marks 70**

**Syllabus: SOFTWARE ENGINEERING**

**NO of Hours: 4**

**No Of Credits: 3**

**Pass Marks 28**

**Course Objectives**

The Objective of the course is to assist the student in understanding the basic theory of software engineering, and to apply these basic theoretical principles to a group software development project.

**UNIT-I: Introduction to Software Engineering & Process 12Hrs**

**The Evolving Role of Software**– Software - The Changing Nature of Software, Software Myths, Legacy Software.

*Process:* Software Engineering-A Layered Technology - A Process Framework - The Capability Maturity Model Integration (CMMI) - Process Patterns, Process Assessments - Personal Software Process(PSP), Team Software Process (TSP).

**Unit-II: Process Models 12Hrs**

The Waterfall Models - Increment Process Models: The Increment Model, The RAD Model - Evolutionary Process Models: Prototyping, The Spiral Model, The Concurrent Development Model.

**Unit-III: Requirements Engineering 14 Hrs**

**Requirements Engineering Tasks** - Initiating The Requirements Engineering Process - Eliciting Requirements: Collaborative Requirements Gathering, Quality Function Deployment, User Scenarios, Elicitation Work Products - Negotiating Requirements - Validating Requirements.

**Unit-IV: Design Engineering 10Hrs**

Design Process And Design Quality - Design Concepts - The Design Model: Data Design Elements, Architectural Design Elements, Interface Design Elements, Component-Level Design Elements, Deployment -Level Design Elements.

**Unit-V:SoftwareQuality: 12Hrs**

Quality and Quality Concepts, Software Quality Assurance (SQA), Software Reviews, Formal Technical Reviews, Formal Approaches to SQA and SSQA, Software Reliability, The ISO 9000 Quality Standards, The SQA Plan.

**Prescribed Text Book:**

1. Software Engineering – A Practitioner’s Approach, Sixth Edition - Roger S Pressman, TATA McGrawHill: Chapters: 1,2,3,7,8 and 9)

**Reference Books:**

1. Software Engineering Principles and Practice by Deepak Jain Oxford University Press
2. Sommerville, “Software Engineering”, Eighth Edition, Pearson Education, 2007

**Student Activity:** Visit any financial organization nearby and prepare requirement analysis report  
2. Visit any industrial organization and prepare risk chart.

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CSC-502C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCs,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

**SEMESTER – V**

**PAPER – VI**

**Max. Marks 70**

**Model Paper**

**SOFTWARE ENGINEERING**

**NO of Hours: 4**

**No Of Credits: 3**

**Pass Marks 28**

**Section – A**

Answer any **FOUR** Questions. Each question carries **FIVE** Marks

**4x5=20M**

1. Write about Software Layered Technology?
2. Explain about Process Framework?
3. Explain about RAD Model?
4. Explain Validating Requirements
5. Explain about Modularity?
6. Write about Software Reliability?

**Section – B**

Answer any **FIVE** Questions. Each question carries **TEN** Marks

**5X10=50M**

7. Explain about CMMI?
8. Explain about Software Myths?
9. Explain about Incremental Model?
10. Explain about Spiral Model
11. Explain about Requirements Engineering Tasks?
12. Write about design concepts in design engineering?
13. Explain about Quality and Quality Concepts?
14. Write about SSQA?

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

COMPUTER SCIENCE	CSC-502C	2021-'22	B.Sc.(MPCs,MCCs)
------------------	----------	----------	------------------

SEMESTER – V      PAPER – VI      Max. Marks 70      Pass Marks 28

Guidelines for paper setting '**SOFTWARE ENGINEERING**'

Unit wise weightage of Marks

	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1	2	2
Unit-2	1	2
Unit-3	1	2
Unit-4	1	1
Unit-5	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CSC-502C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCS,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

**SEMESTER – V**

**PAPER – VI**

**Max. Marks 50**

**Lab List**

**SOFTWARE ENGINEERING**

**Pass Marks 25**

**No. of Hours per week: 2**

**External: 25**

**Internal: 25**

**Credits: 2**

**A. ATM**

1. Objective of an ATM System. 2. Use-case Diagram of an ATM System 3. Class Diagram of an ATM System 4. Sequence Diagram of an ATM System 5. Activity Diagram of an ATM System 6. State Diagram of an ATM System 7. Deployment Diagram of an ATM System

**B. Library management System**

1. Objective of Library management System. 2. Use-case Diagram of Library management 3. Class Diagram of Library management System 4. Sequence Diagram of Library management 5. Activity Diagram of Library management System 6. State Diagram of Library management 7. Deployment Diagram of Library management System

**C. Barcode Reader**

1. Objective of Barcode Reader 2. Use-case Diagram of Barcode Reader 3. Class Diagram of Barcode Reader 4. Sequence Diagram of Barcode Reader 5. Activity Diagram of Barcode Reader 6. State Diagram of Barcode Reader 7. Deployment Diagram of Barcode Reader

**D. Safe Home System**

1. Objective of Safe Home System. 2. Use-case Diagram of Safe Home System 3. Class Diagram of Safe Home System 4. Sequence Diagram of Safe Home System 5. Activity Diagram of Safe Home System 6. State Diagram of Safe Home System 7. Deployment Diagram of Safe Home System

**E. Online Book Store System**

1. Objective of Online Book Store System 2. Use-case Diagram of Online Book Store System 3. Class Diagram of Online Book Store System 4. Sequence Diagram of Online Book Store 5. Activity Diagram of Online Book Store System 6. State Diagram of Online Book Store System 7. Deployment Diagram of Online Book Store System

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college within the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year 2020-21)

<b>COMPUTER SCIENCE</b>	<b>CCSC-505C</b>	<b>2021-22</b>	<b>B. Com (CA)</b>
-------------------------	------------------	----------------	--------------------

**SEMESTER – V**

**PAPER – V**

**Max. Marks 70**

**Pass Marks 28**

**Syllabus**

**OBJECT ORIENTED PROGRAMMING USING JAVA**

**Total Hrs: 60**

**NO. Of. Hours: 5**

**Credits: 3**

**UNIT-I**

**10Hrs**

**Fundamentals of Object – Oriented Programming:** Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features:

**UNIT-II**

**14Hrs**

**Overview of Java Language:** Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **Constants, Variables & Data Types:** Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Type casting, Getting Value of Variables, **Operators.**

**UNIT-III**

**12Hrs**

**Decision Making & Branching:** Introduction, Decision making with if statement, Simple if statement, if-Else statement, Nesting of if-else statements, the else if ladder, the switch statement, the conditional operator. **Looping:** Introduction, while statement, do-while statement, for statement, Jumps in loops.

**UNIT-IV**

**12 Hrs**

**Classes, Objects & Methods:** Introduction, defining a class, adding variables, adding methods, creating objects, Accessing class members, Constructors, Method overloading, Method Overriding, Static members, Nesting of methods;

**UNIT-V**

**12Hrs**

**Inheritance:** Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Abstract Methods and Classes; **Arrays, Strings And Vectors:** Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes; **Interfaces: Multiple Inheritance:** Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

**Prescribed Text Book:**

1. E. Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.

**Reference Books**

1. Programming In Java By Sachin Malhotra And Saurabh Choudhary From Oxford University Press
2. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press
3. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series,
4. Deitel&Deitel. Java TM: How to Program, PHI (2007)
5. Java Programming: From Problem Analysis to Program Design- D.S Mallik

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college with in the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year2020-21)

<b>COMPUTER SCIENCE</b>	<b>CCSC-505C</b>	<b>2021-22</b>	<b>B. Com (CA)</b>
-------------------------	------------------	----------------	--------------------

**SEMESTER – V PAPER – V**

**Max. Marks 70**

**Pass Marks 28**

**Syllabus: OBJECT ORIENTED PROGRAMMING USING JAVA**

**Total Hrs: 60**

**NO. Of. Hours: 4**

**Credits: 3**

**Section- A**

**Answer FOUR Questions. Each Question carries FIVE Marks.**

**4\*5=20M**

1. What are the Applications of OOP?
2. What is a variable? Explain its rules?
3. Explain different data types in java?
4. Write about switch statement?
5. Explain about Constructors?
6. Differences between arrays and vectors?

**Section- B**

**Answer FIVE the Questions. Each Question carries TEN Marks**

**5\*10=50M**

7. Explain the Concepts of Object Oriented Programming?
8. Explain java Features?
9. Explain the structure of java program?
10. Explain different types of Operators in Java with Examples?
11. Explain about Decision Making Statements with examples?
12. Explain Looping statements with example?
13. Explain Method overloading with an example program?
14. Explain about inheritance?

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college with in the jurisdiction of Krishna University A.P, India.

**(With Effect from Academic Year2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CCSC-505C</b>	<b>2021-22</b>	<b>B. Com (CA)</b>
-------------------------	------------------	----------------	--------------------

**SEMESTER – V PAPER – V**

**Max. Marks 70**

**Pass Marks 28**

**Syllabus**

**OBJECT ORIENTED PROGRAMMING USING JAVA**

**Total Hrs: 60**

**NO. Of. Hours: 4**

**Credits: 3**

Unit wise weightage of Marks

	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1	1	2
Unit-2	2	2
Unit-3	1	2
Unit-4	1	1
Unit-5	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us



**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
An Autonomous college with in the jurisdiction of Krishna University A.P, India.  
(With Effect from Academic Year2020-21)

<b>COMPUTER SCIENCE</b>	<b>CCSC-505C</b>	<b>2021-22</b>	<b>B. Com (CA)</b>
-------------------------	------------------	----------------	--------------------

**SEMESTER – V**

**PAPER – V**

**Lab List:                    OBJECT ORIENTED PROGRAMMING USING JAVA    Pass Marks 25**

**No. of Hours per week: 2            External: 25                    Internal: 25                    Credits: 2**

1. Write a program to perform various String Operations
2. Write a program to print the given number is Armstrong or not?
3. Prompt for the cost and selling price of an article and display the profit (or) loss
4. Write a program to print the numbers given by command line arguments
5. Write a program on class and object in java
6. Illustrate the method overriding in JAVA
7. Write a program to find the Simple Interest using Multilevel Inheritance
8. Write a program to display matrix multiplication.
9. Write a program on interface in java
10. Write a program on inheritance

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CCSC 506C</b>	<b>2021-'22</b>	<b>B.Com.(C.A.)</b>
-------------------------	------------------	-----------------	---------------------

**SEMESTER – V**

**PAPER – VI**

**Max. Marks 70**

**Syllabus :**

**DATA BASE MANAGEMENT SYSTEMS**

**NO Of Hours: 5**

**No Of Credits: 3**

**Pass Marks 28**

**Course Objective:** Design & develop database for large volumes & varieties of data with optimized data processing techniques.

**Unit – 1: Database Systems Introduction**

**12Hrs**

*Database Systems:* Introducing the database and DBMS, Why the database is important, *Historical Roots:* Files and File Systems, Problems with File System, Data Management, Database Systems. *Data Models:* The importance of Data models, Data Model Basic Building Blocks, The evaluation of Data Models.

**Unit - II: Relational Database & Data Modelling**

**12 Hrs**

*The Relational Database Model:* A logical view of Data, Keys, Integrity Rules, Relational Set Operators, Indexes, Codd's relational database rules. *Entity Relationship Model:* The ER Model  
*Advanced Data Modelling:* The Extended Entity Relationship Model, Entity clustering.

**Unit-III: Normalization and Database Design**

**14 Hrs**

*Normalization of database tables:* Database Tables and Normalization, The need for Normalization, The Normalization Process, High level Normal Forms, Normalization and database design, de normalization.

**Unit-IV: Structured Query Language**

**12 Hrs**

*Introduction to SQL:* Data Definition Commands, Data Manipulation Commands, Select queries, Advanced Data Definition Commands, Advanced Select queries, Virtual Tables, SQL Join Operators,

**Unit-V: Procedural SQL**

**10 Hrs**

*Introduction to PL/SQL :* Triggers, Stored Procedures, PL/SQL Stored Functions

**Prescribed Text Book:**

- 1. Peter Rob, Carlos Coronel, Database Systems Design, Implementation and Management, Seventh Edition, Thomson (2007).**

**Reference Books:**

- 2Elimasri / Navathe, Fundamentals of Database Systems, Fifth Edition, Pearson Addison Wesley
3. C.J.Date, A.Kannan, S.Swamynathan, An Introduction to Database Systems, Eight edition, Pearson Education (2006).

**Student Activity:**

1. Create your college database for placement purpose.
2. Create faculty database of your college with their academic performance scores

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CCSC 506C</b>	<b>2021-'22</b>	<b>B.Com.(C.A.)</b>
-------------------------	------------------	-----------------	---------------------

**SEMESTER – V**

**PAPER – VI**

**Max. Marks 70**

**Model Paper**

**DATA BASE MANAGEMENT SYSTEMS**

**NO Of Hours: 5**

**No Of Credits: 3**

**Pass Marks 28**

**Section-A**

Answer any **FOUR** Questions. Each question carries **FIVE** Marks

**4x5=20M**

1. Explain the Components of Database System?
2. Explain Entity Relationship Model?
3. Write about Relational Set Operators?
4. Describe BCNF?
5. Write about Special Functions?
6. Explain Stored Procedures?

**Section-B**

Answer any **FIVE** Questions. Each question carries **TEN** Marks

**5X10=50M**

7. What is File? Explain the problems with File system?
8. Explain any three different Data Models?
9. Explain E.F. CODDs' rules?
10. Explain Extended Entity Relationship Model?
11. Explain the concept of Normal Forms?
12. Explain different join operators?
13. Explain DDL and DML commands?
14. Explain about triggers?

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

COMPUTER SCIENCE	CCSC 506C	2021-'22	B.Com.(C.A.)
------------------	-----------	----------	--------------

SEMESTER – V                      PAPER – VI    Max. Marks 70                      Pass Marks 28

Guidelines for paper setting '**DATA BASE MANAGEMENT SYSTEMS**'

Unit wise weightage of Marks

	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1	2	2
Unit-2	1	2
Unit-3	1	1
Unit-4	1	2
Unit-5	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college within the jurisdiction of Krishna University A.P, India.

**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CCSC-506P</b>	<b>2021-'22</b>	<b>B. COM(CA)</b>
-------------------------	------------------	-----------------	-------------------

**SEMESTER – V**

**PAPER – VI**

**Max. Marks 50**

**Lab List DATA BASE MANAGEMENT SYSTEMS**

**Pass Marks 25**

**No. of Hours per week: 2**

**External: 25**

**Internal: 25**

**Credits: 2**

1. Creation of college database and establish relationships between tables
2. Explain various data type in Oracle.
3. Show the structure of the Emp table.
4. Show the structure of the DEPT table.
5. Explain the syntax of SELECT statement.
6. Create a query to display the name, job, hiredate and employee number from emp table.
7. Create a query to display unique jobs from the emp table.
8. Create a query to display the empno as EMP#, ename as EMPLOYEE and Hire\_date from emp.
9. Create a query to display all the data from the EMP table. Separate each column by a comma and name the column THE\_OUTPUT.
10. Create a query to display the name and salary of employees earning more than 2850.
11. Create a query to display the name and salary for all employees whose salary is not in the range of 1500 and 2850.
12. Display the employee name, job and start date of employees hired between February 20 ,1981 and May 1, 1981. Order the query in ascending order of start date
13. Display the employee name and department number of all the employees in departments 10 and 30 in alphabetical order by name.
14. List the name and salary of employees who earn more than 1500 & are in department 10 or 30.
15. Display the name, salary and commissions and sort data in descending order of salary and commission.
16. Display the name and job title of all employees who do not have a manager.
17. Display the name, job and salary for all employees whose job is Clerk or Analyst and their salary is not equal to 1000, 3000 or 5000.
18. Display the names of all employees where the third letter of their name is an 'A'.
19. Display the names of all employees who have two 'L's in their name and are in department 30 or their manager is 7782.
20. Display the name , salary and commission for all employees whose commission amount is grater than their salary increased by 10%.
21. Explain all the character functions.
22. Explain all the number functions.
23. Explain all the Date functions.

Create Student database using the following tables.

STUDENT: Sno : primary key, number Sname : NOT NULL, varchar2 Address: Varchar2

COURSE:Sno : Foreign key.Course Name : varchar2

Queries:

1. Alter table by adding a column fees in table COURSE.
2. Alter table by modifying the address to VARCHAR2(20)
3. Create a view on which the students who joined in one course only.

**PL/SQL.**

1. Write A PL/Sql Program To Swap Two Numbers Without Using Third Variable.
2. Write A PL/Sql Program To Generate Multiplication Tables For Numbers 2,4 And 6
3. Write A PL/Sql Program To Display Sum Of Even Numbers And Sum Of Odd Numbers In The Given Range.
4. Write A PL/Sql Program To Check The Given Number Is Pollinndrome Or Not.
5. Write A PL/Sql Program To Display Top 10 Rows In Emp Table Based On Their Job And Salary.

**Reference Books:**

1. Oracle Pl/Sql By Example. Benjamin Rosenzweig, Elena Silvestrova, Pearsoneducation 3rd Edition
2. Sql& Pl/Sql For Oracle 10g, Black Book, Dr.P.S. Deshpande

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

<b>COMPUTER SCIENCE</b>	<b>CCSC-507C</b>	<b>2021-'22</b>	<b>B.Com.(CA)</b>
-------------------------	------------------	-----------------	-------------------

**SEMESTER – V**

**PAPER – VII**

**Max. Marks 70**

**Syllabus**

**WEB TECHNOLOGIES**

**NO Of Hours: 5**

**No of Credits: 3**

**Pass Marks 28**

**Unit -I Introduction to XHTML:**

**13Hrs**

Introduction to HTML, Basic html, Document body text, Hyperlinks, Lists, Tables, Images, Frames, Forms and XHTML.

**Unit- II: CSS:**

**12Hrs**

Cascading Style Sheets: Introduction, Defining your own styles, properties and values in styles, Formatting blocks of information, Layers.

Java Script: java Script, the basics, Variables, String Manipulations, Mathematical functions, Statements, Operators.

**Unit –III: Objects in Java Script & Dynamic HTML with Java Script**

**13Hrs**

*Objects in Java Script:* Data and objects in java script, Regular expressions, Exception Handling, built in objects, Events.

*Dynamic HTML with Java Script:* Data validation, Rollover buttons, Moving images.

**Unit –IV: XML Defining Data for Web Applications**

**12Hrs**

*XML:* Introduction to XML, Basic XML, document type definition, XML Schema, Document object model, Using XML parser.

**Unit -V:JSP:**

**10Hrs**

JSP Lifecycle, Basic Syntax, EL (Expression Language), EL Syntax, Using EL Variables

**Prescribed Books:**

**1. Chris Bates, Web Programming Building Internet Application, Second Edition, Wiley**

2. Head First Servlets and JSP 2<sup>nd</sup> Edition, Bryan Basham, Kathy Sierra

3. Uttam Kumar Roy, Web Technologies from Oxford University Press

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2018-'19)**

<b>COMPUTER SCIENCE</b>	<b>CCSC-507C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCs)</b>
-------------------------	------------------	-----------------	--------------------

**SEMESTER – V**

**PAPER – VII**

**Max. Marks 70**

**Model Paper**

**WEB TECHNOLOGIES**

**No of Credits: 3**

**Pass Marks 28**

**Section-A**

Answer **FOUR** Questions. Each Question carries **FIVE** Marks.

5 X 4=20M

1. Write about structure of HTML Document with an example?
2. Explain about lists in HTML?
3. Write about java script statements?
4. Write about Rollover buttons?
5. Describe XML Elements?
6. Write the syntax of EL and EL variables?

**Section-B**

Answer **FIVE** Questions. Each Question carries **TEN** Marks.

5 X 10=50M

7. Explain about hyper links? Write about how to link another pages
8. What is Form? Explain about forms with examples
9. What is CSS? How to design Cascading style sheet
10. Explain about Mathematical Functions
11. Explain about Regular Expressions
12. Write about Data validations in DHTML
13. Explain about Document Object Model
14. Explain about JSP Lifecycle with neat diagram



**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2020-21)**

COMPUTER SCIENCE	CCSC-507C	2021-'22	B.COM(CA)
------------------	-----------	----------	-----------

SEMESTER – V                      PAPER – VII                      Max. Marks 70                      Pass Marks 28

Guidelines for paper setting 'WEB TECHNOLOGIES'

Unit wise weightage of Marks

	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1	2	2
Unit-2	1	2
Unit-3	1	2
Unit-4	1	1
Unit-5	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weight age given by us

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

**An Autonomous college within the jurisdiction of Krishna University A.P, India.**

**(With Effect from Academic Year 2021-22)**

<b>COMPUTER SCIENCE</b>	<b>CSC-301C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCs,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

**SEMESTER –III**

**PAPER – III**

**Max. Marks 70**

**Model Paper:**

**DATA BASE MANAGEMENT SYSTEMS**

**NO of Hours: 4**

**No Of Credits: 3**

**Pass Marks 28**

**Course Objective:**

The objective of the course is to introduce the design and development of databases with special emphasis on relational databases.

**UNIT I**

**12Hrs**

Overview of Database Management System: Introduction to data, information, database, database management systems, file-based system, Drawbacks of file-Based System, database approach, Classification of Database Management Systems, advantages of database approach, Various Data Models, Components of Database Management System, three schema architecture of data base, costs and risks of database approach.

**UNIT II**

**12Hrs**

Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, IS A relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, advantages of ER modelling.

**UNIT III**

**12Hrs**

Relational Model: Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra, relational calculus, tuple relational calculus, domain relational Calculus (DRC), Functional dependencies and normal forms upto 3rd normal form.

**UNIT IV**

**12Hrs**

Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Join Operation, Set Operations, View, Sub Query.

**UNIT V**

**12Hrs**

PL/SQL: Introduction, Shortcomings of SQL, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Procedure, Function, Database Triggers, Types of Triggers.

**BOOKS:**

1. Database System Concepts by Abraham Silberschatz, Henry Korth, and S. Sudarshan, McGrawhill
2. Database Management Systems by Raghu Ramakrishnan, McGrawhill
3. Principles of Database Systems by J. D. Ullman
4. Fundamentals of Database Systems by R. Elmasri and S. Navathe
5. SQL: The Ultimate Beginners Guide by Steve Tale.

**RECOMMENDED CO-CURRICULAR ACTIVITIES:**

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

**A. Measurable**

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))

4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity)

**B. General**

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

**RECOMMENDED CONTINUOUS ASSESSMENT METHODS:**

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Practical assignments and laboratory reports,
4. Observation of practical skills,
5. Individual and group project reports like Create your college database for placement purpose.
6. Efficient delivery using seminar presentations,
7. Viva voce interviews.
8. Computerized adaptive testing, literature surveys and evaluations,
9. Peers and self-assessment, outputs form individual and collaborative work

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2021-22)**

<b>COMPUTER SCIENCE</b>	<b>CSC-301C</b>	<b>2021-'22</b>	<b>B.Sc.(MPCs,MCCs)</b>
-------------------------	-----------------	-----------------	-------------------------

**SEMESTER – III**

**PAPER – III**

**Max. Marks 70**

**Model Paper : **DATA BASE MANAGEMENT SYSTEMS****

**NO of Hours: 4**

**No Of Credits: 3**

**Pass Marks 28**

**Section-A**

***Answer any FOUR Questions. Each question carries FIVE Marks***

***4x5=20M***

1. Explain the Components of Database System?
2. Explain about advantages of database approach?
3. Explain building blocks of an entity relationship diagram?
4. Describe BCNF?
5. Write about Special Functions?
6. Explain Stored Procedures?

**Section-B**

***Answer any FIVE Questions. Each question carries TEN Marks***

***5X10=50M***

7. What is File? Explain the problems with File system
8. Explain the Degree of Data Abstraction.
9. Explain E.F.CODDs' rules.
10. Explain Extended Entity Relationship Model.
11. Explain the concept of Normal Forms.
12. Explain about SDLC.
13. Explain DDL and DML commands.
14. Explain about triggers.

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

**An Autonomous college within the jurisdiction of Krishna University A.P, India.  
(With Effect from Academic Year 2021-22)**

COMPUTER SCIENCE	CSC-301C	2021-'22	B.Sc.(MPCs,MCCs)
------------------	----------	----------	------------------

SEMESTER – III PAPER –III Max. Marks 70 Pass Marks 28

Guidelines for paper setting '**DATA BASE MANAGEMENT SYSTEMS**'

Unit wise weight age of Marks

	Section-A (Short answer questions)	Section-B (essay questions)
Unit-1	2	2
Unit-2	1	2
Unit-3	1	2
Unit-4	1	1
Unit-5	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college within the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year 2021-22)

<b>COMPUTER SCIENCE</b>	<b>CSC-301P</b>	<b>2021-'22</b>	<b>B.Sc.(MPCS,MCCs)</b>
<b>SEMESTER – III</b>	<b>PAPER – III</b>	<b>Max. Marks 50</b>	

**Lab List DATA BASE MANAGEMENT SYSTEMS**

**Pass Marks 25**

**No. of Hours per week: 2**

**External: 25**

**Internal: 25**

**Credits: 2**

1. Draw ER diagram for hospital administration
2. Creation of college database and establish relationships between tables
3. Relational database schema of a company is given in the following figure.  
**Relational Database Schema - COMPANY**  
**Questions to be performed on above schema**
1. Create above tables with relevant *Primary Key, Foreign Key and other constraints*
2. Populate the tables with data
3. Display all the details of all employees working in the company.
4. Display *ssn, lname, fname, address* of employees who work in department no 7.
5. Retrieve the *Birthdate and Address* of the employee whose name is 'Franklin T. Wong'
6. Retrieve the name and salary of every employee
7. Retrieve all distinct salary values
8. Retrieve all employee names whose address is in 'Bellaire'
9. Retrieve all employees who were born during the 1950s
10. Retrieve all employees in department 5 whose salary is between 50,000 and 60,000(inclusive)
11. Retrieve the names of all employees who do not have supervisors
12. Retrieve SSN and department name for all employees
13. Retrieve the name and address of all employees who work for the 'Research' department
14. For every project located in 'Stafford', list the project number, the controlling department number, and the department manager's last name, address, and birth date.
15. For each employee, retrieve the employee's name, and the name of his or her immediate supervisor.
16. Retrieve all combinations of Employee Name and Department Name
17. Make a list of all project numbers for projects that involve an employee whose last name is 'Narayan' either as a worker or as a manager of the department that controls the project.
18. Increase the salary of all employees working on the 'ProductX' project by 15%. Retrieve employee name and increased salary of these employees.

19. Retrieve a list of employees and the project name each works in, ordered by the employee's department, and within each department ordered alphabetically by employee first name.
20. Select the names of employees whose salary does not match with salary of any employee in department 10.
21. Retrieve the employee numbers of all employees who work on project located in Bellaire, Houston, or Stafford.
22. Find the sum of the salaries of all employees, the maximum salary, the minimum salary, and the average salary. Display with proper headings.
23. Find the sum of the salaries and number of employees of all employees of the 'Marketing' department, as well as the maximum salary, the minimum salary, and the average salary in this department.
24. Select the names of employees whose salary is greater than the average salary of all employees in department 10.
25. Delete all dependents of employee whose *ssn is '123456789'*.
26. Perform a query using alter command to drop/add field and a constraint in Employee table.

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
**(With Effect from Academic Year 2021-22)**

<b>COMPUTER SCIENCE</b>	<b>CCSC-301C</b>	<b>2021-'22</b>	<b>B.com(CA)</b>
-------------------------	------------------	-----------------	------------------

**SEMESTER – III**

**PAPER – III**

**Max. Marks 70**

**Syllabus: Programming in C**

**NO of Hours: 4**

**No Of Credits: 3**

**Pass Marks 28**

**UNIT-I: General Fundamentals& Programming Languages**

**10Hrs**

**General Fundamentals:** Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations.

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms, Flow Charts, **Programming Languages** – Generations of Programming Languages – Structured Programming Language- Design and Implementation of Correct, Efficient and Maintainable Programs.

**UNIT- II: Introduction To C & Decision Making control Statements**

**12Hrs**

**Introduction to C:** Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comment , Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C-Operators in C- Programming Examples.

**Decision Control and Looping Statements:** Introduction to Decision Control Statements– Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement.

**UNIT III: Arrays**

**10 Hrs**

**Arrays:** Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array– Operations on Arrays – one dimensional, two dimensional and multi dimensional arrays, character handling and strings.

**UNIT-IV:Functions & Structures**

**13Hrs**

**Functions:** Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions.

**Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated DataTypes.

**UNIT-V:Pointes&Files**

**15Hrs**

**Pointers:** Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers -- Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers

**Files:** Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.

**BOOKS**

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hillpublications.
2. Brain W Kernighan and Dennis M Ritchie - The ‘C’ Programming language” - Pearsonpublications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. YashavantKanetkar - Let Us ‘C’ – BPBPublications.



**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college within the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year 2020-'21)

<b>COMPUTER SCIENCE</b>	<b>CCSC-301C</b>	<b>2021-'22</b>	<b>B.COM(CA)</b>
-------------------------	------------------	-----------------	------------------

**SEMESTER – III PAPER – III Max. Marks 70**

**Pass Marks 28**

**Title :Programming in 'C'**

**NO. Of. Hours: 4Credits:3**

**Section- A**

**Answer FOUR Questions. Each Question carries FOUR Marks.**

**4\*5=20M**

1. Explain different types of programming languages?
2. Explain about Data types in C?
3. Write about Break and Continue Statement?
4. Explain one dimensional array with example?
5. Explain Storage Classes in C?
6. Explain dynamic memory allocation?

**Section- B**

**Answer FIVE the Questions. Each Question carries EIGHT Marks**

**5\*10=50M**

7. Draw and Explain Block Diagram of Computer?
8. Explain about Algorithm and Flowchart with Examples?
9. Explain decision making Looping statements with examples?
10. Explain Structure of C Program with Example?
11. Write about two dimension arrays? Give an example program?
12. Write Passing Parameters Techniques in Functions?
13. Difference between structures and unions?
14. What is File? Explain different File Modes?

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college within the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year 2021-'22)

COMPUTER SCIENCE	CSC-301C	2021-'22	B.com(CA)
------------------	----------	----------	-----------

SEMESTER – III

PAPER –III

Max. Marks 70

**Guidelines for paper setting ‘Programming in ‘C’**

<u>Unit wise weight age of Marks</u>	Section-A (Short answer questions)	Section-B (essay questions)
Unit-I	2	2
Unit-II	1	2
Unit-III	1	2
Unit-IV	1	1
Unit -V	1	1

- Each Short answer question carries 5 marks in Section –A
- Each Essay question carries 10 marks in Section –B
- The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weight age given by us

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

An Autonomous college within the jurisdiction of Krishna University A.P, India.

(With Effect from Academic Year 2021-22)

<b>COMPUTER SCIENCE</b>	<b>CCSC-301P</b>	<b>2021-'22</b>	<b>B.Com.(CA)</b>
<b>SEMESTER – III</b>		<b>PAPER – III</b>	<b>Max. Marks 50</b>

**Lab List      Programming in 'C'**

**Pass Marks 20**

**No. of Hours per week: 2**

**External: 25**

**Internal: 25**

**Credits: 2**

1. Write C programs for
  - a. Fibonacci Series
  - b. Prime number
  - c. Palindrome number
  - d. Armstrong number.
2. Write a 'C' program for multiplication of two matrices
3. Write a 'C' program to implement string functions
4. Write a 'C' program to swap numbers
5. Write a 'C' program to calculate factorial using recursion
6. Write a 'C' program to perform addition of two complex numbers using constructor
7. Write a program to find the largest of two given numbers in two different classes using friend function
8. Program to add two matrices using dynamic constructor
9. Implement a class string containing the following functions:
  - a. Overload + operator to carry out the concatenation of strings.
  - b. Overload == operator to carry out the comparison of strings.
10. Program to implement inheritance.

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

**An Autonomous college within the jurisdiction of Krishna University A.P, India.**

(With Effect from Academic Year 2021-22)

Semester I	Course Code	Course Title	Credits	Periods
<b>B.Sc. (MPCS/ MCCS / MSCS)</b>	<b>CSCT11B</b>	<b>Problem Solving In C</b>	<b>4</b>	<b>60</b>

**Course Objectives:**

This course aims to provide exposure to problem-solving through programming and introduce the concepts of the C Programming language.

**Course Learning Outcomes:**

Course Outcome No	Upon successful completion of the course, a student will be able to:	Program Outcome No.
<b>CO1</b>	Understand the evolution & functionality of Digital Computers and develop an algorithm for solving a given problem.	PO1, PO7, PSO1, PSO4
<b>CO2</b>	Understand tokens and control structures in C.	PO1, PO7, PSO1, PSO4
<b>CO3</b>	Understand arrays and strings and implement them.	PO1, PO7, PSO1, PSO4
<b>CO4</b>	Understand the right way of using functions, pointers, structures and unions in C	PO1, PO7, PSO1, PSO4
<b>CO5</b>	Develop and test programs written in C files	PO1, PO7, PSO1, PSO4

**UNIT I**

**12 periods**

**General Fundamentals:** Introduction to computers: Block diagram of a computer, characteristics and limitations of computers, applications of computers, types of computers, computer generations.

**Introduction to Algorithms and Programming Languages:** Algorithm – Key features of Algorithms, Flow Charts, Programming Languages – Generations of Programming Languages – Structured Programming Language-Design and Implementation of Correct, Efficient and Maintainable Programs.

**UNIT II**

**12 periods**

**Introduction to C:** Introduction – Structure of C Program – Writing the first C Program –File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples.

**Decision Control and Looping Statements:** Introduction to Decision Control Statements– Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – goto Statement.

**UNIT III**

**10 periods**

**Arrays:** Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array– Operations on Arrays – one dimensional, two dimensional and multi-dimensional arrays, character handling and strings.

**UNIT IV**

**14 periods**

**Functions:** Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions.

**Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.

**UNIT V**

**12 periods**

**Pointers:** Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers

**Files:** Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.

**BOOKS**

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hill publications.
2. Brain W Kernighan and Dennis M Ritchie - The ‘C’ Programming language” - Pearson publications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. YashavantKanetkar - Let Us ‘C’ – BPB Publications.

### **RECOMMENDED CO-CURRICULAR ACTIVITIES:**

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

#### **A. Measurable**

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity)

#### **B. General**

1. Group Discussion
2. Try to solve MCQ’s available online.
3. Others

### **RECOMMENDED CONTINUOUS ASSESSMENT METHODS:**

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports like “Creating Text Editor in C”.
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

@ @ @ @

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

**An Autonomous college within the jurisdiction of Krishna University A.P, India.**

(With Effect from Academic Year 2021-22)

**MODEL Question Paper:**

**TITLE: Problem solving in C**

**COURSE CODE: CSCT11B**

**SECTIONS: B.Sc. (MPCS / MCCS/ MSCS)**

**SEMESTER: I**

**TIME: 3 Hrs.**

**MAX: 75M**

**SECTION –A**

**ANSWER ANY FIVE QUESTIONS**

**5 X 5 =25 M.**

1. What is a flowchart? Utilize flowchart symbols and draw a flowchart to find biggest of two numbers. (CO1, L3)
2. Write a short note on block diagram of computers. (CO1, L2)
3. Explain do...while loop with an example program. (CO2 , L2)
4. Develop a C program to find largest number in a given integer list. (CO3 ,L3)
5. Classify data types in C. Write a short note on any two data types. (CO2 , L2)
6. How to declare and initialize 1D arrays. (CO3, L1)
7. Construct a student structure to accept student details and write a C program to calculate grade of a student. (CO4 , L3)
8. Illustrate command line arguments with an example program. (CO5, L2)

**SECTION – B**

**ANSWER ALL THE QUESTIONS**

**5 X 10 =50 M.**

- 9 A) Define Algorithm. Demonstrate Key features of algorithm with examples. (CO1, L2)  
(or)  
B) List out the characteristics and limitations of computers. (CO1, L1)
- 10 A) Give Classification of Control statements in C. Explain multi-way decision making statements in C with examples. (CO2, L2)  
(or)  
B) Write a program to check whether the given number is Armstrong or not. (CO2, L3)
- 11 A) Develop a program in C for matrix multiplication. (CO3, L3)  
(or)  
B) Demonstrate various String handling functions in C with examples. (CO3, L2)
- 12 A) Compare and contrast structures with unions. (CO4, L4)  
(or)  
B) Explain the types of functions in C. (CO4, L2)
- 13 A) List different file handling functions in C. Explain with examples. (CO5, L2)  
(or)  
B) Explain call by value and call by reference with example. (CO4, L2)

@ @ @ @

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**

**An Autonomous college within the jurisdiction of Krishna University A.P, India.**

(With Effect from Academic Year 2021-22)

**BLUE PRINT**

**TITLE: Problem solving in C**

**COURSE CODE: CSCT11B**

**SECTIONS: B.Sc. (MPCS / MCCS / MSCS)**

**SEMESTER: I**

**TIME: 3 Hrs.**

**MAX: 75M**

**SECTION-A**

**ANSWER ANY FIVE QUESTIONS**

**5X5=25M**

1. Unit 1
2. Unit 1
3. Unit 2
4. Unit 3
5. Unit 2
6. Unit 3
7. Unit 4
8. Unit 5

**SECTION – B**

**ANSWER ALL THE QUESTIONS**

**5 X 10 =50 M.**

9 A) Unit 1.

(or)

B) Unit 1.

10 A) Unit 2.

(or)

B) Unit 2.

11 A) Unit 3.

(or)

B) Unit 3.

12 A) Unit 4.

(or)

B) Unit 4.

13 A) Unit 5.

(or)

B) Unit 5.

@@@@

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
 (With Effect from Academic Year 2021-22)

Semester I	Course Code	Course Title	Credits	Prd s
<b>B.Sc.(MPCS / MCCS/ MSCS)</b>	<b>CSCP11B</b>	<b>Problem Solving in C Lab</b>	<b>1</b>	<b>30</b>

Course Outcome No	Upon successful completion of this course, students should have the knowledge and skills to:	Program Outcome No
CO1	Apply logical skills to analyse a given problem	PO1, PO7, PSO1, PSO4, PSO2
CO2	Design an algorithmic solution for a given problem	PO1, PO7, PSO1, PSO4, PSO2
CO3	Write a maintainable C program according to coding standards for a given algorithm	PO1, PO7, PSO1, PSO4, PSO2
CO4	Debug a given program	PO1, PO7, PSO1, PSO4, PSO2
CO5	Execute the C program	PO1, PO7, PSO1, PSO4, PSO2

**Experiments List  
Cycle-I**

**Week 1:**

Write a C program to check whether the given two numbers are equal, bigger or smaller?

**Week 2:**

Write a C program to perform arithmetic operations using Switch...case?

**Week 3:**

- Write a program to find the sum of individual digits of a positive integer.
- Write a program to check whether the given number is Armstrong or not.

**Week 4:**

Write a program to generate the first N terms of the Fibonacci sequence.

**Week 5:**

Write a program to find both the largest and smallest number in a list of integer values

**Week 6:**

- Write a program that uses functions to add two matrices.
- Write a program for multiplication of two n X n matrices.

**Week 7:**

Write a program to demonstrate reflection of parameters in swapping of two integer values using Call by Value & Call by Address.

**Week 8:**



Write a program to calculate factorial of given integer value using recursive functions.

### **Cycle-II**

#### **Week 9:**

Write a program to search an element in a given list of values.

#### **Week 10:**

Write a program to illustrate pointer arithmetic.

#### **Week 11:**

Write a program to sort a given list of integers in ascending order.

#### **Week 12:**

Write a program to calculate the salaries of all employees using Employee (ID, Name, Designation, Basic Pay, DA, HRA, Gross Salary, Deduction, Net Salary) structure.

- a. DA is 30 % of Basic Pay
- b. HRA is 15% of Basic Pay
- c. Deduction is 10% of (Basic Pay + DA)
- d. Gross Salary = Basic Pay + DA+ HRA
- e. Net Salary = Gross Salary - Deduction

#### **Week 13:**

Write a program to perform various string operations.

#### **Week 14:**

Write a program to read the data character by character from a file.

#### **Week 15:**

Write a program to create Book (ISBN, Title, Author, Price, Pages, Publisher) structure and store book details in a file and perform the following operations

- a. Add book details
- b. Search a book details for a given ISBN and display book details, if available
- c. Update a book details using ISBN
- d. Delete book details for a given ISBN and display list of remaining Books.

@@@@

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
 (With Effect from Academic Year 2021-22)

Semester I	Course Code	Course Title	Credits	Periods
B.Com.(Computer Applications	CABT11A	Information Technology	4	75

**INFORMATION TECHNOLOGY**

**Objective:**

It provides to learn computer basics and basic principles of using Windows operation system and be able to access the Internet, data communication, Software, hardware and various new technologies in information technology.

**Course Outcomes:**

COURSE OUTCOME NO	Upon successful completion of this course, students should have the knowledge and skills to
CO1	Understand fundamental concepts of a computer and its basic components
CO2	Understand basic functioning of an operating system and customizing Windows Desktop
CO3	Analyse type of soft wares and programming languages
CO4	Have knowledge in basic Network and Data Communication Concepts
CO5	Understand the need of data mining and get familiarize with basics of new concepts like KDD, OLAP

**UNIT-I: INTRODUCTION:**

**13Periods**

- 1.1 Introduction to computers
- 1.2 Generations of computers
- 1.3 An overview of computer system - Types of computers
- 1.4 Input & Output Devices.
- 1.5 Hardware: Basic components of a computer system- Control unit– ALU- Input/output functions.
- 1.6 Memory – RAM – ROM – EPROM - PROM and Other types of memory.

**UNIT-II: OPERATING SYSTEM (OS):**

**12Periods**

- 2.1 Meaning - Definition & Functions.
- 2.2 Types of OS - Booting process
  - 2.2.1 DOS – Commands (internal & external) - Wild card characters
- 2.3 Windows: Using the Start Menu –Control Panel – Using multiple
  - 2.3.1 Windows – Customizing the Desktop – Windows accessories (Preferably latest version of windows or Linux Ubuntu).

**Unit-III: SOFTWARE:**

**15Periods**

- 3.1 System software and application software.
  - 3.1.1 Operating system windows OS,
  - 3.1.2 Mobile device operating system and notebook operating systems
- 3.2 Application software Types of personal application software
  - 3.2.1 Spread sheet-data management
  - 3.2.2 Word processing
  - 3.2.3 Desktop publishing
  - 3.2.4 Graphics, CAD, CAM, CIM
- 3.3 Programming Languages
  - 3.3.1 Assembly language
  - 3.3.2 Procedural language, non-procedural language, natural programming language.

3.3.3 Hypertext mark-up language, modelling language, object-oriented programming language.

**Unit-IV: DATA COMMUNICATION:**

**20 Periods**

4.1 Telecommunication and Networks Communication media & channel cable media

4.1.1 Broad cast media channels twisted pair

4.1.2 Coaxial cable, fibers optical cable, micro wave, satellite, radio, cellular radio, infrared global positioning system.

4.2 Introduction, Analog and Digital signals, modulation need of modulations, modems.

4.3 Telecommunication System communication processors:

4.3.1 Modem

4.3.2 Multiplexers

4.3.3 Front –end-processor.

4.4 Networks LAN, WAN, VAN, virtual private network (VPN).

4.5 Internet, intranet and Extranets

4.5.1 The evolution of the internet, service provided by the internet, World Wide Web.

**Unit-V: NEW TECHNOLOGIES:**

**10 Periods**

5.1 New technologies in Information Technology:

5.1.1 Introduction to hyper media, artificial intelligence and business intelligence, knowledge discovery in database (KDD)

5.2 Data warehouse and data marts. Data mining and OLAP.

**Student Activity:**

Students have to submit assignments and give seminars on various topics allotted to them.

**Total of 5 Hrs is allotted for student seminars.** Student activity also includes gathering of information related to latest technologies in computers.

**Library Activity:**

Students will visit library in their allotted time and will refer various text books to gather information for their assignments.

**TEXT/ REFERENCE BOOKS:**

1. B.E.V.L.Naidu, V.V.. Devi Prasad Konti, Ganti Naga Srikanth, Himalaya publishing House.
2. Introduction to Computers: Peter Norton, McGraw Hill

@ @ @ @

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**

(With Effect from Academic Year 2021-22)

**MODEL Question Paper:**

**PAPER TITLE: Problem solving in C      COURSE CODE: CABT11A**

**CLASS: B.Com (Computer Applications)**

**SEMESTER: I**

**TIME: 3 Hrs.**

**MAX: 75M**

---

**SECTION – A**

**Answer any five of the following**

**5X5 =25M**

1. Illustrate the characteristics of RAM and ROM. (CO1, L2)
2. Define Operating system. What are different types of OS? (CO2, L1)
3. Demonstrate application software and system software. (CO3, L2)
4. What are the different types of networks? (CO4, L1)
5. Explain the steps involved in the process of KDD. (CO5, L2)
6. Explain about input devices. (CO1, L2)
7. What are analog and digital signals? (CO4, L1)
8. Explain Data warehouse. (CO5, L2)

**SECTION –B**

**Answer the following**

**5x10=50M**

9. a) Explain the block diagram of computer. (CO1, L2)

**OR**

- b) Explain the generations of computers. (CO1, L2)

10. a) What are the functions of operating system? (CO2, L1)

**OR**

- b) What are DOS Internal and External commands? (CO2, L1)

11. a) Explain the characteristics of various types of programming languages. Give examples. (CO3, L2)

**OR**

- b) Summarize the concepts on CAD, CAM and CIM. (CO3, L2)

12. a) Define the various types of Communication media and channels. (CO4, L1)

**OR**

- b) What are the Advantages and Disadvantages of Internet? (CO4, L1)

13. a) Demonstrate On-Line Analytical process (OLAP). (CO5, L2)

**OR**

b) Explain about Artificial Intelligence and Business Intelligence. (CO5, L2)  
@@@

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
(With Effect from Academic Year 2021-22)

Semester I	Course Code	Course Title	Credits	Periods
<b>B.Com. (E-Commerce)</b>	<b>CSCT11B</b>	<b>E-COMMERCE &amp; WEB DESIGNING</b>	<b>4</b>	<b>60</b>

**COURSE OBJECTIVES:**

The main objective of the course is to impart conceptual understanding on business transactions on worldwide web and electronic commerce & Electronic Customer Relationship Management and Web designing concepts for Providing quality content on website.

**COURSE OUTCOMES:**

COURSE OUTCOME NO	Upon successful completion of this course, students should have the knowledge and skills to
CO1	Understand the structure of HTML its basic tags
CO2	Implement various HTML tags for web page development
CO3	Understand about implementing forms and frames in web page designing
CO4	Gain knowledge in E- commerce and its business models
CO5	Differentiate traditional and e – marketing and also gain knowledge in E-CRM and EPS

**UNIT I: Introduction to Web Designing**

**(12Hrs)**

- 1.1 **Introduction**
- 1.2 1.1.1 WWW and its Evaluation
- 1.1.2 Define network and its advantages
- 1.1.3 Types of networks
- 1.1.4 Network Topologies
- 1.2 **HTML**
- 1.2.1 Define HTML
- 1.2.2 Structure of HTML
- 1.2.3 Basic HTML tags
- 1.2.4 Formatting HTML tags

**UNIT II: HTML Tags**

**(12Hrs)**

- 2.1: **Lists**
- 2.1.1 Ordered List
- 2.1.2 Unordered List
- 2.2 **Links**
- 2.2.1 Link tag
- 2.2.2 image tag
- 2.2.3 Marquee tag
- 2.3 **Tables**
- 2.3.1 Table Creation
- 2.3.2 Attributes of Table

**UNIT III: Forms and Frames and CSS**

**(12Hrs)**

- 3.1 **Forms**

- 3.1.1 forms creation
- 3.1.2 form tag
- 3.1.3 input fields of form

### 3.2 Frames

- 3.2.1 Frame Creation
- 3.2.2 Frameset tag
- 3.2.3 frame tag

### 3.3 Cascading Style Sheets

- 3.3.1 Introduction to CSS
- 3.3.1 Types of CSS
- 3.3.2 in-line Style Sheet
- 3.3.3 internal Style Sheet
- 3.3.4 External Style Sheet

## UNIT IV: An Overview on E-Commerce

(10Hrs)

### 4.1.1 Introduction E-Commerce

- 1. Definition of E- Commerce and its advantages & disadvantages
- 2. Electronic Data Interchange (EDI)
- 3. E-Commerce transactional issues and challenges
- 4.1.4 Difference between Commerce and E-Commerce

### 4.2 Business Models for Ecommerce

- 1. B2C -Business to consumer.
- 2. B2B – Business to business
- 3. C2B – Consumer to business.
- 4. C2C – Consumer to consumer.

## UNIT V: E-Marketing &E – CRM& Electronic Payment Systems

(14Hrs)

### 5.1 Online Marketing

- 1. Traditional Vs. E-Marketing
- 5.1.2 Online Marketing
- 5.1.3 E-Advertising
- 5.1.4 Internet marketing

### 5.2 E – CRM

- 5.2.1 Definition of CRM and E-CRM and its Applications
- 5.2.2 E- CRM Architectural components
- 5.2.3 Definition & characteristics of E- SCM
- 5.2.4 Benefits and goals of E – SCM
- 5.2.5 E-Logistics of UPS

### 5.3 Electronic Payment Systems

- 5.3.1 Types of EPS
- 5.3.2 Traditional payment system and modern payment system
- 5.3.3 Steps for electronic payment
- 5.3.4 Payment security

#### Text Book:

- 1. Uttam Kumar Roy, Web Technologies, Oxford University Press.
- 2. E-Commerce- A Managerial Perspective- P. T. Joseph, Prentice- Hall of India, New Delhi, 2005.

#### References:

- 1. Kogent Learning Solutions Inc.(Author), “Black Book HTML 5.0”, dreamtech.
- 2. Daniel Amor, E-Business R(Evolution), Pearson Edude, New Delhi, 2005.

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
(With Effect from Academic Year 2021-22)

<i>Computer Science</i>		<b>2021-22</b>	<b>B.Com (Computers Applications)</b>
-------------------------	--	----------------	---------------------------------------

**SEMESTER - I**

**Credits: 2**

**WEB DESIGNING LAB (NEW SYLLABUS)**

**COURSE OBJECTIVES:**

The purpose of this course is to introduce to students to the field of creation web pages using HTML language. The students will be able to enhance their analyzing and help to creation for Web Site Design

**COURSE OUTCOMES:**

<b>COURSE OUTCOME NO</b>	<b>Upon successful completion of this course, students should have the knowledge and skills to</b>
CO1	Implement HTML tags.
CO2	Implementing lists and tables in web pages.
CO3	Implementing frames in web pages.
CO4	Implementing frames in web pages.
CO5	Creation of CSS in a web page.

1. Write a HTML program to print text in bold and italic font.
2. Write a HTML program to print Heading tags.
3. Write a HTML program using Text formatting tags
3. Write a HTML program to implement unordered lists.
4. Write a HTML program to implement order lists.
5. Write a html file which display 3 images at LEFT, RIGHT and CENTER respectively in the browser.
- 6 Create a HTML file which contains hyperlinks.
- 7 Write a HTML program to create a table
8. Write a HTML program to create a table using Row Span and Cols pan
9. Write a HTML program to create a table using cell padding and Row Spacing
10. Write a HTML program to create a simple form
11. Create a Registration form that interacts with the user. Collect login name, password, date of birth, gender, address, qualification.
12. Create a HTML page using frameset tag.
- 13Write a Program to create an inline style sheet.
14. Write a program to create Embedded Style Sheet.
15. Write a program to create an external style sheet to illustrate the “Font” elements.

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
(With Effect from Academic Year 2021-22)

**E-Commerce & Web Designing**

**Model Paper**

**Class: B.Com (Computer Applications)**

**Course Code:**

**Semester: II**

**Max Marks: 75 M**

**Time: 3Hours**

**Section-A**

**ANSWER ANY FIVE QUESTIONS**

**5X5M=25M**

1. Define Networks and its types? (CO3, L1)
2. Explain Link tags in HTML (CO4, L2)
3. Define frames in HTML (CO5, L1)
4. Explain the E-Commerce (CO1, L2)
5. Compare Traditional marketing and E-Marketing. (CO2, L2)
6. Demonstrate concept of formatting Tags (CO4, L2)
7. Compare Commerce and E-Commerce. (CO1, L2)
8. Explain Benefits and goals of E – SCM. (CO2, L2)

**Section-B**

**ANSWER THE FOLLOWING QUESTIONS**

**5X10M=50M**

9. (A) Define Structure of HTML with examples (CO3, L1)  
(OR)  
(B) What are different types Network Topologies? (CO3, L1)
10. (A) Classify List Types in HTML. (CO4, L2)  
(OR)  
(B) Demonstrate the concept of Table creation with apply all Attributes. (CO4, L2)
11. (A) Define forms in html and creation of form with all input types? (CO5, L1)  
(OR)  
(B) What are different types of CSS with suitable examples? (CO5, L1)
12. (A) Explain EDI. (CO1, L2)  
(OR)  
(B) Classify Business Models for Ecommerce. (CO1, L2)
13. (A) Illustrate E- CRM Architectural components. (CO2, L2)  
(OR)  
(B) Explain Electronic Payment Systems. (CO2, L2)

\*\*\*\*\*



**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
 (With Effect from Academic Year 2021-22)

Semester I	Course Code	Course Title	Credits	Periods
Life Skill Course	LSC1	BASIC COMPUTER APPLICATIONS	2	30

**COURSE OBJECTIVES:**

This course aims at providing exposure to students in skill development towards basic office applications.

**Course Learning Outcomes:**

After successful completion of the course, student will be able to:

1. Demonstrate basic understanding of computer hardware and software.
2. Apply skills and concepts for basic use of a computer.
3. Identify appropriate tool of MS office to prepare basic documents, charts, spreadsheets and presentations.
4. Create personal, academic and business documents using MS office.
5. Create spreadsheets, charts and presentations.
6. Analyze data using charts and spread sheets.

**Unit- I Basics of Computers:**

**8 Hrs**

Definition of a Computer - Characteristics of computers, Applications of Computers – Block Diagram of a Digital Computer – I/O Devices, hardware, software human ware, application software, system software, Memories - Primary, Auxiliary and Cache Memory.

**MS Windows** – Desktop, Recycle bin, My Computer, Documents, Pictures, Music, Videos, Task Bar, Control Panel.

**Unit-II: MS-Word:**

**8Hrs**

Features of MS-Word - MS-Word Window Components - Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, MailMerge.

**Unit-III: MS-Excel:**

**10Hrs**

Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Inserting Rows/Columns – Changing column widths and row heights, Formulae, Referencing cells, Changing font sizes and colors, Insertion of Charts, Auto fill, Sort. **MS-PowerPoint:** Features of PowerPoint – Creating a Presentation - Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures - Inserting Other Objects, Audio, Video - Resizing and scaling of an Object – Slide Transition – Custom Animation.

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside  
a. the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz, Group Discussion
4. Solving MCQ's available online.
5. Suggested student hands on activities:
  - Create two folders, Rename the folder, create two files each using notepad and paint, move the files from one folder to another folder, delete a file you have created, copy and paste text within notepad.
  - Create a letter head for your college with watermark, your resume, visiting card, brochure for your college activity, organization chart for your college, any advertisement, Prepare your Class time table.
  - Prepare your mark sheet, Prepare your class time table, Prepare a salary bill for an organization, Sort the bill as per the alphabetical order of the names, Get online weather data and analyze it with various charts.
  - Create a PowerPoint presentation for a student seminar.

### **Reference Books**

1. Working in Microsoft Office – Ron Mansfield - TMH.
2. MS Office 2007 in a Nutshell –Sanjay Saxena – Vikas Publishing House.
3. Excel 2020 in easy steps-Michael Price – TMH publications

**AG & SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCES - VUYYURU.**  
**An Autonomous college within the jurisdiction of Krishna University A.P, India.**  
(With Effect from Academic Year 2021-22)

**MODEL Question Paper:**

**PAPER TITLE: BASIC COMPUTER APPLICATIONS**

**COURSE CODE: LSC1**

**SEMESTER: I**

**TIME: 2 Hrs.**

**MAX: 50M**

---

**SECTION – A**

(Total: 4x5=20 Marks)

Answer any **four questions**. Each answer carries **5 marks**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

**SECTION – B**

(Total: 3x10 = 30 Marks)

(Answer any **three questions**. Each answer carries **10 marks**)

- 1.
- 2.
- 3.
- 4.
- 5.

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF ECONOMICS**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**29-10-2021**

## **AGENDA**

1. To Review and recommend any changes in the syllabi , Model Question Papers and Guidelines of 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> Semesters of I, II and III Year B.A. Economics Papers for the Academic Year 2021-2022.
  
2. To Discuss and recommend the pattern of internal Assessment , Guidelines and Model Question Papers in 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> Semesters of B.A Degree Economics papers for the Academic Year 2021-2022.
  
3. To Recommend the guidelines to be followed by the Question Paper Setters in Economics for the 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> Semester-end exams.
  
4. To Recommend the teaching and evaluation methods to be followed under the Autonomous Status.
  
5. To Propose the panel of Question paper setters and Examiners.
  
6. To Suggest innovative methods of teaching.
  
7. Any other matter.

## **RESOLUTIONS:**

- 1) It is Resolved to continue the same syllabi under CBC System approved by the Academic council of 2020- 2021 for 1<sup>st</sup>Degree in I Semester&III Degree in V Semester Economics papers, of B.A Classes.

**The APSHE New syllabus was introduced in the I Semester of I Degree B.A from the Academic year 2020 – 2021 and in the III Semester of II Degree B.A From the Academic year 2021 – 2022.**

One Value added Course is offered for 1<sup>st</sup> B.A students

- 2) Out of maximum 100 marks in each paper 30 marks shall be allocated for Internal Assessments regarding III and V Semesters.
  - A) To implement 30 marks for internal assessment and 70 marks for External Assessment from the academic year 2019-20 and that is also implemented to the III and V Semesters from 2020-21Academic year and 2021 – 2022 Academic year also.
  - B) Out of these 30 marks, 20 marks are allocated for internal tests, 5 marks are allocated for assignment for III and V Semesters. The two tests will be conducted and average of these two tests shall be deemed as the marks obtained by a student, and remaining 5 marks are allocated for attendance.

**3) Out of maximum 100 marks 25 Marks shall be allocated for Internal Assessments Regarding the I Semester from the Academic year 2021 – 2022.**

**A) To implement 25 Marks for Internal Assessments and 75 Marks for External Assessment regarding the I Semester from the Academic year 2021 – 2022.**

**B) Out of these 25 marks, 20 Marks are allocated for internal tests, 5 marks are Allocated for assignment/ attendance Regarding the I Semester from the Academic year 2021 – 2022.**

- 4)Discussed and recommended the syllabi, Model question papers under CBC system and guidelines to be followed by the question paper setters of 1<sup>st</sup> semester of I , III and V semesters of B.A Classes for the Academic year 2021-2022.

- 4) To follow the teaching and evaluation methods, it is also resolved to use various other methods like Group discussions, Quiz, Organizing Seminars, Guest Lectures and Workshops to upgrade the knowledge of the students and impart new skills of learning as frequently as possible.
- 5) Resolved to authorize the chairman of Board of studies to suggest the panel of paper setters and Examiners to the controller of Examinations as for the requirement.
- 7) The APSHE NewSKILL DEVELOPMENT COURSE Financial Markets is Introduced in the III Semester for II B.A Students from the Academic year 2021-2022. No Internal Examinations for this Paper. Only External Examination will be conducted for 50 Marks.

It is resolved to follow further changes if any in the syllabus by the competent Authority.

  
Chairman

**SEMESTER-I**

	Title of the Course	Instructi on Hours per week	Credit s	Evaluation		
				CIA MAR KS	SEE	
					MARK S	DURATIO N
ECO- 101	MICRO ECONOMIC ANALYSIS	5	4	25	75	3Hrs

**SEMESTER-III**

Cours e Code	Title of the Course	Instructi on Hours per week	Credit s	Evaluation		
				CIA MAR KS	SEE	
					MARK S	DURATIO N
ECO- 301	DEVELOPMENT ECONOMICS	5	4	30	70	3Hrs



**SEMESTER-III**

Course Code	Title of the Course	Instruction Hours per week	Credits	Evaluation		
				CIA MARKS	SEE	
					MARKS	DURATION
ECO-501	ECONOMIC DEVELOPMENT AND INDIAN ECONOMY	5	4	30	70	3Hrs
ECO-502	INDIAN AND ANDHRA PRADESH ECONOMY	5	4	30	70	3Hrs

## **PROGRAMME OUT COMES**

1. able to understand basic concepts of economics.
2. able to analyze economic behavior in practice.
3. To understand the economic way of thinking.
4. ability to analyze historical and current events from an economic perspective.
5. The ability to write clearly expressing an economic point of view.
6. Be exposed to alternative approaches to economic problems through exposure of course work in allied fields.
7. To create students ability to suggest of the various economic problems.

## **Program me specific out comes**

After completion of BA Degree program with Economics combination the Graduates will be able to

PSO1- To understand the Basics of Economics and Economic Activities of students and public in our society.

PSO2- To create an awareness on different activities like production distribution marketing etc..

PSO3- To analysis the price determination theories to the entrepreneurs, business activities.

PSO4- To prepare the students for future studies employability and responsible citizenship.



# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccruited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

TITLE OF THE PAPER: MICRO ECONOMIC ANALYSIS

Semester: I

Course Code	ECO-101	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	25
No. of Lecture Hours / Week	5	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction:	Year of Offering: 2021 - 22	Year of Revision: ----	Percentage of Revision: 0%
CLASS:	1.B.A		

## COURSE OUTCOMES:

At the end of the course, the student will be able to:

**CO1-**Able to understand the Definitions of Economics ,differences between micro economics and Macro Economics

**CO2-** Able to understand the factorsdetermining demand Law of Demand - reasons and exceptions-ElasticityofDemand and IndifferenceCurveanalysis

**CO3-** Able to understand the various Cost curves and Revenue Curves Concepts of Production function, Law of variable propositions , law of Return to Scale.

**CO4-** Able to understand the Different Markets and its Equilibrium

**CO5-** Able to understand the Different theories of Rent, Profit and interest .

**Learning Objectives:**

- 1.To understand the Definitions of Economics, differences between micro economics and Macro Economics
- 2.To understand the factorsdetermining demand Law of Demand - reasons and Exceptions-ElasticityofDemand and IndifferenceCurveanalysis
- 3.To understand the various Cost curves and Revenue Curves Concepts of Production function, Law of variable proportions , law of Return to Scale.
- 4.To understand the Different Markets and its Equilibrium
5. To understand the Different theories of Rent, Profit and Interest

**MICRO ECONOMIC ANALYSIS  
SYLLABUS**

**Unit-I Economic Analysis and Methodology (15HRS)**

- 1.1 Definitions of Economics
  - 1.1.1 Wealth Definition (2h)
  - 1.1.2 Welfare Definition (2h)
  - 1.1.3 Scarcity Definition (2h)
  - 1.1.4 Growth Oriented Dynamic Definition- (2h)
- 1.2 Methodology in Economics
  - 1.2.1 Micro and Macro Economics- (3h)
  - 1.2.2 Deductive and Inductive Methods (3h)
  - 1.2.3 Production Possibility Curve (PPC) (1h)

**Unit-II THEORY OF CONSUMPTION (23HRS)**

- 2.1 Demand Analysis (2h)
  - 2.1.1 Concept & Factors Determining Demand (2h)
  - 2.1.2 Law of Demand and Exceptions (1h)
- 2.2 Elasticity of Demand (1h)
  - 2.2.1 Types of Price Elasticity of Demand (2h)
  - 2.2.2 Methods to measure Price Elasticity of Demand (2h)
- 2.3 Indifference Curve Analysis
  - 2.3.1 Indifference Schedule & Indifference map (2h)
  - 2.3.2 Marginal Rate of Substitution (2h)
  - 2.3.3 Properties of Indifference curves (2h)
  - 2.3.4 Budget line & Consumers Equilibrium through Indifference Curve (5h)
  - 2.3.5 Consumer's Surplus through Indifference Curve Analysis (2h)

**Unit-III THEORY OF PRODUCTION (20HRS)**

- 3.1 Concept of Production Function (1h)
  - 3.1.1 Cobb-Douglas Production Function (1h)
  - 3.1.2 The law of variable proportions (2h)
  - 3.1.3 The law of Returns to Scale (2h)
  - 3.1.4 Economies of large Scale Production (2h)
- 3.2 Concepts of cost (1h)
  - 3.2.1 Short run Cost Curves (3hrs)
- 3.3 Law of supply (1hr)
- 3.4 Revenue Concepts (T.R., A.R. & M.R.) (3hrs)
  - 3.4.1 Relationship between AR, MR & E.D (2hrs)
  - 3.4.2 Cost minimization (1h)
  - 3.4.3 Profit Maximization (1h)

**Unit-IV THEORY OF EXCHANGE (12HRS)**

- 4.1 Classification of Markets (1h)
- 4.2 Features of Perfect Market Conditions (2h)

- 4.3 Price Determination under Perfect Competition Market (2hrs)
- 4.4 Features of Monopoly Market (2h)
- 4.5 Features of Monopolistic Competition Market (2h)
- 4.6 Features of Oligopoly Market (2h)
- 4.7 Kinky Demand Curve Analysis (2hrs)

**Unit-V THEORY OF DISTRIBUTION**

**(20HRS)**

- 5.1 Concepts of Functional and Personal Distribution (2h)
- 5.2 Marginal Productivity Theory of Distribution (2h)
- 5.3 Theories of Rent
  - 5.3.1 Ricardian Theory of Rent (1hr)
  - 5.3.2 Marshall's Economic rent (2h)
- 5.4 Theories of Wage
  - 5.4.1 Standard of Living Theory of wages (1h)
  - 5.4.2 Modern Theory of wages (2h)
- 5.5 Theories of Interest
  - 5.5.1 Classical Theory of Interest (2h)
  - 5.5.2 Loanable Funds Theory of Interest (2h)
  - 5.5.3 Keynes Liquidity Preference Theory of Interest (2h)
- 5.6 Theories of Profit
  - 5.6.1 Risk Theory of Profit (1h)
  - 5.6.2 Uncertainty Theory of Profit (1h)
  - 5.6.3 Dynamic Theory of Profit (1h)
  - 5.6.4 Innovation Theory of Profit (1h)

**Text Book :** Telugu Academy Publications

**Reference Books :**

H.L. Ahuja – Advanced Economic Theory - S.Chand & Company Publishers  
 H.S. Agarwal – Principles of Economics  
 M.L. Seth – Micro Economics, Lakshmi Narayana Agarwal Publishers  
 A.W. Stonier & D.C Hague – A Text Book of Economic Theory, E.L.B.S  
 Koutsoyiannis : Modern Micro Economics, Mc. Millan

**Co-curricular activities and Assessment Methods:**

1. Continuous Evaluation: Monitoring the progress of student's learning
2. Class Tests, Assignments and Quizzes
3. Presentations, Projects and Assignments and Group Discussions: Enhances critical thinking skills and personality
4. Semester- end Examination: critical indicator of student's learning and teaching methods adopted by teachers throughout the semester

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**(AUTONOMOUS), (2021 - 2022) VUYYURU**

**SEMESTER- I**

**MODEL PAPER**

Section-A

**I. Answer any Five of the Following:**

**5X5=25M**

1. Dynamic Theory Profit- L2,CO5
2. Classification of Markets- L2,CO4
3. Relationship between Average Cost and Marginal Cost-L3,CO3
4. Features of Monopoly Market- L1,CO4
5. Subsistence theory of Wages-L2,CO5
6. Explain the law of supply-L3,CO3
7. Explain the concept of Economic Rent?- L3,CO5
8. Explain Micro Economic analysis -L3,CO1

Section-B

**Answer of the Following:**

**5X10=50M**

- 9.(A) Discuss the Concept of Risk bearing theory of Profits ?-L3,CO5  
(or)  
B) Critically examine the Keynes Liquidity Preference theory of interest- L3,CO5
10. (A) Define Micro and Macro Economics. Explain their Importance-L1,CO1  
(or)  
(B) Examine the Modern theory of wages ?-L3,CO5
11. (A) Critically examine the Marginal Productivity theory of distribution?-L3,CO5  
(or)  
(B) Graphically explain the law of variable proportions-L3, CO3
12. (A) Explain the Price determination of under Perfect Competition?- L3,CO4  
(or)  
(B) Examine the Scarcity definition -L2,CO1
13. (A) Explain consumer equilibrium with the help of indifference curve analysis-  
L3,CO2  
(or)  
(B) Analyse the features of Oligopoly market and write about Kinky Demand  
Curve ?-L1,CO4



# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccruited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

**TITLE OF THE PAPER:DEVELOPMENT ECONOMICS**

**Semester: III**

<b>Course Code</b>	<b>ECO-301</b>	<b>Course Delivery Method</b>	<b>Class Room / Blended Mode - Both</b>
<b>Credits</b>	<b>4</b>	<b>CIA Marks</b>	<b>25</b>
<b>No. of Lecture Hours / Week</b>	<b>5</b>	<b>Semester End Exam Marks</b>	<b>75</b>
<b>Total Number of Lecture Hours</b>	<b>60</b>	<b>Total Marks</b>	<b>100</b>
<b>Year of Introduction:</b>	<b>Year of Offering:</b> <b>2021 - 22</b>	<b>Year of Revision: ----</b>	<b>Percentage of Revision: 0%</b>
<b>CLASS:</b>	<b>II.B.A</b>		

## **LEARNING OUTCOMES FOR THE COURSE :**

At the end of the course, the student is expected to demonstrate the following cognitive abilities and psychomotor skills.

1.Remembers and states in a systematic way (Knowledge)

Various concepts and definitions and indicators relating to economic growth and Development including recent developments

2. Explains (understanding)

a. Distinction between growth and development with examples

c. Characteristics of developing and developing economies and distinction between the two

d. factors contributing to development, Choice of Techniques and a few important models and strategies of growth



3. Critically examines using data and figures (analysis and evaluation)

a. the theoretical aspects of a few models and strategies of economic growth

b. role and importance of various financial and other institutions in the context of India's economic development

4. Draws critical diagrams and graphs.

a. to explain the models and strategies

b. to highlight empirical evidences to support the strategies

# **DEVELOPMENT ECONOMICS**

## **Syllabus**

### Module - 1: Economic Growth and Development

Economic Development as a Branch of Study of Economics – Scope and Importance - Distinction between Economic Growth and Economic Development -Measures of Economic Development and their limitations - Relevance of Herd (Group) Immunity in the context of COVID 19 - three core values of economic development : Sustainability, Self-esteem and Freedom – Economy and Environment : Concepts of sustainable development and inclusive growth

### Module -2: Modern Economic Growth

Characteristics of Underdeveloped Countries - World Bank and IMF Classification of countries - Modern economic growth – Kuznets’ Six Characteristics -Obstacles to economic development - Vicious Circle of Poverty and cumulative causation -Factors of economic growth: Economic and Non-economic - Capital Formation – Foreign and Domestic capital, Debt and Disinvestment.

### Module-3: Theories of Development and Underdevelopment

Classical Theory: Adam Smith, Ricardo and Malthus -Marxian Theory - Schumpeter Theory - Rostow’s Stages of Economic Growth -Harrod-Domar two sector model -Solow’s Model and Robinson’s Golden Age

### Module – 4: Strategies of Economic Development

Strategies of Economic Development – Big Push -Balanced Growth -Unbalanced Growth - Mahalanobis Model - Agriculture vs Industry -Capital Intensive Technology vs Labour Intensive Technology -Role of Infrastructure in Economic Development

### Module - 5: Institutions and Economic Development

Role of State in Economic Development -Role of Markets - Market Failure and Regulation by State -Public sector vs Private sector -Economic Planning – concept, objectives and types - NITIAYog - Economic Federalism -Financial Institutions and Economic Development – Role of International Institutions – IDBI, ADB, IMF – Foreign Trade – FIIs and FDIs

**Reference Books:**

1. Dhingra, I.C., Indian Economy, Sultan Chand, New Delhi, 2014.
2. Gaurav Datt and Ashwani Mahajan, Datt and Sundharam's Indian Economy, S.Chand & Co., 2016.
3. G. M. Meier, Leading Issues in Economic Development, Oxford University Press, New York, 3/e.
4. M. P. Todaro and Stephen C. Smith, Economic Development, 10/e, Indian Edition Published by Dorling Kindersley India Pvt. Ltd. 2012.
5. M. L. Koncham, Economic development and planning, Himalaya publications
6. S.K.Misra & V.K.Puri, Indian Economy, Himalaya Publishing House, 2015.
7. R.S.Rao, V.Hanumantha Rao & N.Venu Gopal (Ed.), Fifty Years of Andhra Pradesh (1956-2006), Centre for Documentation, Research and Communications, Hyderabad, 2007.
8. G. Omkarnath, Economics - A Primer for India - Orient Blackswan, 2012.
9. Economic development and growth, Spectrum Publishing House, Hyderabad, 2016

**Recommended Co-curricular Activities:**

1. Assignments on the models and the strategies of economic development adopted in Indian economy
2. Student Seminar on development oriented themes relating to Indian economy
3. Quiz to test critical understanding of the fundamental concepts of growth and development and the growth models and strategies
4. Group discussion on the effectiveness of the roles played by various institutions in India's economic development
5. Group project work to examine specific aspects of growth like poverty, unemployment, human development, gender development as Indian experience in the context of economic development preferably at the state and local level
6. Poster presentation

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), (2021 - 2022) VUYYURU**

<b>SEMESTER – III</b>	<b>COURSE CODE:ECO - 301</b>
<b>PAPER TITLE :DEVELOPMENT ECONOMICS</b>	

Duration : 3Hours

Maximum marks : 70

Pass marks : 28

**SECTION - A**

Answer any **TWO** of the following questions

(2x5=10 Marks)

1. Features of Economic Development.
2. World Bank's country classification systems.
3. Labour Intensive Technology.
4. What are the different types of Plans.

**SECTION – B**

Answer any **FOUR** of the following questions.

(4X15=60 Marks)

5. What is Economic Growth and What is Economic Development? Differentiate between Economic Growth and Economic Development.
6. Write about the Relevance of Herd (Group) Immunity in the context of Covid – 19.
7. Explain the features of Developing Countries with special reference to India.
8. Write about the vicious circle of poverty.
9. Explain about Schumpeter's Theory of Economic Development.
10. Write about the Role of Infrastructure in Economic Development.
11. What are the main objectives of planning in India?
12. Write about NITI AYOJ?

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), (2021 - 2022) VUYYURU**

The Guidelines to be followed by the question paper setters in **DEVELOPMENT ECONOMICS** for the III Semester – End Examinations (2021 - 2022)

**PAPER TITLE : DEVELOPMENT ECONOMICS**

Paper- III      Semester – III      Maximum marks : 70      Duration : 3Hours

**Weightage for the question paper**

Syllabus	Section-A (Short answer questions)	Section-B (Essay questions)
Unit-1 (35Marks)	1	2
Unit-2 (35Marks)	1	2
Unit-3 (15Marks)	-----	1
Unit-4 (20Marks)	1	1
Unit-5 (35Marks)	1	2
TOTAL 140	20	120

1. Each question carries 5 marks in Section-A
2. Each Essay question carries 15 marks in Section –B
3. The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

TITLE OF THE PAPER: ECONOMIC DEVELOPMENT AND INDIAN ECONOMY Semester:  
V

Course Code	ECO-501	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	25
No. of Lecture Hours / Week	5	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction:	Year of Offering: 2021 - 22	Year of Revision: ----	Percentage of Revision: 0%
CLASS:	III.B.A		

## LEARNING OUTCOMES FOR THE COURSE

1. To be able to understand economic growth and development and different growth models. HorrodDomor, Adam Smith's theory etc. Karal Marks able to understand some growth models.
2. Development theories: theories of persistence of under development – strategies for development balanced and unbalanced growth strategy, development with unlimited supply of labour (Lewis).
3. Economics of natural resources and sustainable development :- this course will help in understanding that types of natural resources and their exploitation.
4. Understand the population and economic growth understand basic features of Indian economy. trend and composition of national income and for capital income, occupational distribution, basic demography features.
5. Study poverty, inequality and unemployment; conceptual and measurement issues – the Indian situation. to analyze new economic policies (privatization liberalization and globalization in India).

## **ECONOMIC DEVELOPMENT AND INDIAN ECONOMY SYLLABUS**

### **Module - 1**

Concept of Economic Growth - Distinction between economic growth and development - Measurement of economic development -Theories of Economic Growth:  
Adam Smith, Rostow, Karl Marx and Harrod&Domar Models.

### **Module - 2**

Sustainable development - Balanced and unbalanced growth-choice of techniques  
Labour intensive and capital intensive methods.

### **Module - 3**

Basic features of the Indian Economy - Natural Resources - Important  
Demographic features- Concept of Population Dividend - Population Policy.

### **Module - 4**

National Income in India - trends and composition-poverty, inequalities and  
Unemployment - Measures taken by the Government. - MGNREGS

### **Module - 5**

Economic reforms - liberalization, privatization and globalisation - concept of  
inclusive growth.

### **REFERENCES:**

1. Dhingra, I.C - "Indian Economy", Sultan Chand, 2014.
2. RuddarDutt and K.P.M. Sundaram - "Indian Economy", S.Chand& Co., 2015.
3. G.M.Meier -"Leading Issues in Economic Development", Oxford University Press, New York,.
4. M.P.Todaro - "Economic Development", Longman, London 6/e, 1996.
5. Reserve Bank of India - Hand book of Statistics on Indian Economy (Latest).
6. S.K.Misra&V,K,Puri - "Indian Economy", Himalaya Publishing House, 2015.
7. R.S.Rao, V.HanumanthaRao&N.VenuGopal (Ed) - Fifty Years of Andhra Pradesh (1956-2006), Centre for Documentation, Research and Communications, Hyderabad, 2007.
8. G.Omkarnath - Economics - A Primer for India - Orient Blackswan, 2012.
9. Benjamin Higgins - Economic Development
10. Telugu Academy Publications.
11. Dr. Ch.S.G.K. Murthy, Indian Economy - Gitam University

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), (2021 - 2022) VUYYURU**

<b>SEMESTER – V</b>	<b>COURSE CODE:ECO-501</b>
<b>PAPER TITLE : ECONOMIC DEVELOPMENT AND INDIAN ECONOMY</b>	

Duration : 3Hours

Maximum marks : 70

Pass marks : 28

**SECTION - A**

Answer any **TWO** of the following questions

(2x5=10 Marks)

1. Labour intensive techniques
2. Population Dividend
3. Poverty.
4. Globalisation.

**SECTION – B**

Answer any **FOUR** of the following questions

(4X15=60 Marks)

5. Critically Examine the Recordian theory of Growth.
6. Explain the concepts of Economic Growth and Economic Development and its differences
7. Critically Examine the Balanced Growth theory.
8. What are the Basic features of Indian Economy.
9. Explain the causes of population explosion in India.
10. Explain the composition and trends in India's National Income.
11. What is poverty? Mention the measures taken by the Government.
12. Explain the Liberalisation policy in India.



**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), (2021 - 2022) VUYYURU**

The Guidelines to be followed by the question paper setters in **ECONOMIC DEVELOPMENT AND INDIAN ECONOMY** for the V Semester – End Examinations (2020 - 2021)

**PAPER TITLE :ECONOMIC DEVELOPMENT AND INDIAN ECONOMY**

Paper- V Semester – V Maximum marks : 70 Duration : 3Hours

**Weightage for the question paper**

Syllabus	Section-A (Short answer questions)	Section-B (Essay questions)
Unit-1 (30Marks)	-----	2
Unit-2 (20Marks)	1	1
Unit-3 (35Marks)	1	2
Unit-4 (35Marks)	1	2
Unit-5 (20Marks)	1	1
TOTAL 140	20	120

1.Each question carries 5 marks in Section-A

2.Each Essay question carries 15 marks in Section –B

3. The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

**TITLE OF THE PAPER:INDIAN AND ANDHRAPRADESH ECONOMY**

**Semester: V**

<b>Course Code</b>	<b>ECO-501</b>	<b>Course Delivery Method</b>	<b>Class Room / Blended Mode - Both</b>
<b>Credits</b>	<b>4</b>	<b>CIA Marks</b>	<b>25</b>
<b>No. of Lecture Hours / Week</b>	<b>5</b>	<b>Semester End Exam Marks</b>	<b>75</b>
<b>Total Number of Lecture Hours</b>	<b>60</b>	<b>Total Marks</b>	<b>100</b>
<b>Year of Introduction:</b>	<b>Year of Offering:</b> <b>2021 - 22</b>	<b>Year of Revision: ----</b>	<b>Percentage of Revision: 0%</b>
<b>CLASS:</b>	<b>III.B.A</b>		

## **LEARNING OUTCOMES FOR THE COURSE:**

- 1.Upon successful completion of this course , students should have to acquire knowledge regarding agriculture sector in India ,its trends and productivity
- 2.to make the students to understand about Indian industry.
- 3.to understand foreign direct investment and service sector in India they will be identifying the various objectives of pharming in india and its achievements.
- 4.To make students to understand about Andhra Pradesh economy and its progress

# **Indian and Andhra Pradesh Economy**

## **Syllabus**

### **Module - 1**

Indian Agriculture - Importance of Agriculture in India - Agrarian structure and relations- Factors determining Productivity- Agricultural Infrastructure - Rural credit - Micro Finance - Self Help Groups (SHGs) - Agricultural Price policy- concept of Crop Insurance - Food Security.

### **Module - 2**

Structure and growth of Indian Industry - Industrial policies of 1956 & 1991 Meaning of Micro small and Medium Enterprises (MSMEs)- Problems and Prospects of small scale Industries in India.

### **Module - 3**

Disinvestment in India - FEMA - Foreign direct investment - Services Sector in India – Reforms in Banking and Insurance -, IT, Education and Health.

### **Module - 4**

Planning in India Economy - Objectives of Five year plans - Review of Five year Plans - Current Five year plan- NITI Aayog

### **Module - 5**

Andhra Pradesh Economy - Population - GSDP - Sector Contribution and trends - IT – Small Scale Industry - SEZs.

### **REFERENCES:**

1. Dhingra, I.C - "Indian Economy", Sultan Chand, 2014.
2. RuddarDutt and K.P.M. Sundaram - "Indian Economy", S.Chand& Co., 2015.
3. G.M.Meier - "Leading Issues in Economic Development", Oxford University Press, New York, 3/e.
4. M.P.Todaro - "Economic Development", Longman, London 6/e, 1996.
5. Reserve Bank of India - Hand book of Statistics on Indian Economy (Latest).
6. S.K.Misra&V,K,Puri - "Indian Economy", Himalaya Publishing House, 2015.
7. R.S.Rao, V.HanumanthaRao&N.VenuGopal (Ed) - Fifty Years of Andhra Pradesh (1956-2006), Centre for Documentation, Research and Communications,Hyderabad, 2007.
8. G.Omkarnath - Economics - A Primer for India - Orient Blackswan, 2012.
9. Telugu Academy Publications.
10. Dr.Ch.S.G.K.Murthy, Indian Economy - Gitam University.

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**(AUTONOMOUS), (2021 - 2022) VUYYURU**

<b>SEMESTER – V</b>	<b>COURSE CODE:ECO-502</b>
<b>PAPER TITLE : Indian and Andhra Pradesh Economy</b>	

Duration : 3Hours

Maximum marks : 70

Pass marks : 28

**SECTION - A**

Answer any **TWO** of the following questions

**(2x5=10 Marks)**

1. Industrial policy 1956.
2. FEMA
3. NeethiAyog .
4. SEZs ( Special Economic Zones).

**SECTION – B**

Answer any **FOUR** of the following questions

**(4X15=60 Marks)**

5. Explain the Importance of Agriculture sector in India.
6. What is Green Revolution ? Explain the causes and Benefits of Green Revolution.
7. State the 1991 Industrial Resolution policy.
8. Explain the problems and remedies of small and cottage Industries in India.
9. Review the Disinvestment in India.
10. Explain the Foreign Direct Investment in India .
11. Review the performance of Five year plan's in India.
12. Explain the changes in the shares of various sectors in Gross Domestic Product in Andhrapradesh State.

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**(AUTONOMOUS), (2021 - 2022) VUYYURU**

The Guidelines to be followed by the question paper setters in **Indian and Andhra Pradesh Economy** for the V Semester – End Examinations (2020 - 2021)

**PAPER TITLE : Indian and Andhra Pradesh Economy**

Paper- V      Semester – V      Maximum marks : 70      Duration : 3Hours

**Weightage for the question paper**

Syllabus	Section-A (Short answer questions)	Section-B (Essay questions)
Unit-1 (30Marks)	-----	2
Unit-2 (35Marks)	1	2
Unit-3 (35Marks)	1	2
Unit-4 (20Marks)	1	1
Unit-5 (20Marks)	1	1

Total    140

20

120

- 1.Each question carries 5 marks in Section-A
- 2.Each Essay question carries 15 marks in Section –B
3. The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us



# A. G & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

**TITLE OF THE PAPER:FINANCIAL MARKETS**

**Semester: V**

<b>Course Code</b>	<b>FM-301</b>	<b>Course Delivery Method</b>	<b>Class Room / Blended Mode - Both</b>
<b>Credits</b>	<b>2</b>	<b>CIA Marks</b>	<b>25</b>
<b>No. of Lecture Hours / Week</b>	<b>2</b>	<b>Semester End Exam Marks</b>	<b>75</b>
<b>Total Number of Lecture Hours</b>	<b>30</b>	<b>Total Marks</b>	<b>100</b>
<b>Year of Introduction:</b>	<b>Year of Offering:</b> <b>2021 - 22</b>	<b>Year of Revision: ----</b>	<b>Percentage of Revision: 0%</b>
<b>CLASS:</b>	<b>III.B.A</b>		

Learning Outcomes:

After successful completion of this course, the students will be able to;

1. Acquire knowledge of financial terms
2. Know the concepts relating to and markets and different avenues of investment
3. Understand the career skills related to Stock Exchanges
4. Comprehend the personal financial planning and money market skills

SKILL DEVELOPMENT COURSES  
ARTS STREAM  
Syllabus of  
FINANCIAL MARKETS

UNIT-I: 06hrs

Indian Financial System- its components - Financial markets and institutions

UNIT-II: 10hrs

Capital Market - its function - organizations - elements - (shares, debentures, bonds, mutual funds) debt market - Equity market (SEBI) and secondary market (NSE)

UNIT-III: 10hrs

Money market - Organized - Unorganized - Sub market (call money, commercial bills, Treasury bill, Certificate of Deposit, Commercial papers)

**Co-curricular activities: (04 hrs)**

1. Collection and study of pamphlets, application forms etc.
2. Invited lectures on the field topics by local experts
3. Introducing Online classes from NSE
4. Field visit to mutual fund offices/share brokers
5. Observation, study and analysis of selected companies share prices
6. Assignments, Group discussion, quiz etc.

**Reference books:**

1. T.R. Jain R.L.Sarma - Indian Financial System- VK Global publisher
2. Jithendra Gala - Guide to Indian Stock markets Buzzing Stock publishing house
3. Saha Siddhartha- Indian financial System- and Markets - McGraw hill
4. Websites on Indian Financial markets.

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**(AUTONOMOUS), (2021 - 2022) VUYYURU**

MODEL QUESTION PAPER FORMAT

Max. Marks: 50

Time: 1 1/2hrs (90 Minutes)

**SECTION A (Total: 4x5=20 Marks)**

**(Answer any four questions. Each answer carries 5 marks)**

1. Objectives of financial system.
2. Functions of financial markets.
3. Difference between primary and secondary Market.
4. Differences between Debt market and Equity market.
5. Methods of floatation of securities in primary market.
6. Commercial bill market.
7. Role of RBI in the commercial paper market.
8. Types of bills in money market.

**SECTION B (Total: 3x10 = 30 Marks)**

**(Answer any three questions. Each answer carries 10 marks)**

1. Explain the classification of financial markets.
2. Describe the Role of financial system in Economic Development.
3. Define capital Market? Explain its characteristics?
4. Write about National Stock Exchange of India limited (NSE).
5. Define Money Market? Explain the characteristics, objectives and functions of money market.
6. Explain the challenges of Indian money market and describe measures to improve Indian money market.



**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**(AUTONOMOUS), (2021 - 2022) VUYYURU**

The Guidelines to be followed by the question paper setters in FINANCIAL  
MARKETS for the III Semester – End Examinations (2021 - 2022)

**PAPER TITLE :FINANCIAL MARKETS**

Paper- S.D.C Semester – III

Maximum marks : 50

Duration : 1 1/2Hours

**Weightage for the question paper**

Syllabus	Section-A (Short answer questions)	Section-B (Essay questions)
Unit-1 (30Marks)	2	2
Unit-2 (35Marks)	3	2
Unit-3 (35Marks)	3	2
Total 100	40	60

- 1.Each question carries 5 marks in Section-A
- 2.Each Essay question carries 10 marks in Section –B
3. The Question papers setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us

**A.G&S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE  
(AUTONOMOUS), VUYYURU**



**DEPARTMENT OF ENGLISH**

**BOARD OF STUDIES MEETING**

**GENERAL ENGLISH**

VENUE

**ENGLISH LANGUAGE LABORATORY**

DATE

**9<sup>th</sup> November, 2021**

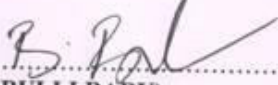
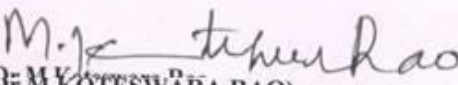


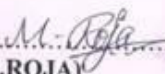
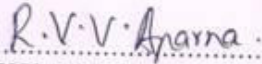
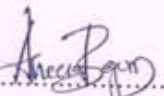
**Minutes of the meeting of Board of Studies in General English for the Autonomous courses of AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru, held through Google Meet on 09-11-2021 in the English Language Laboratory at 11.00 am.**

Sri B.Bulli Babu

...

Presiding

**Members Present:**

- 1)   
(B.BULLI BABU) ..... Chairman Head, Department of English  
AG & SG S Degree College  
Vuyyuru-521165
- 2)   
(Dr.M.KOTESWARA RAO) University Nominee Professor,  
Department of English  
Krishna University,  
Machilipatnam.
- 3)   
(Dr.G.SRI LATHA) ..... Academic Council Nominee Head,  
Department of English,  
PBS College,  
Vijayawada.
- 4)   
(Ms.G.SONI) ..... Academic Council Nominee Lecturer in English,  
GDC, Ravulapalem.
- 5)   
(M.ROJA) ..... Member Lecturer in English  
AG & SG S Degree College,  
Vuyyuru-521165
- 6)   
(R.V.V.APARNA) ..... Member Lecturer in English  
A.G & S.G.S Degree College,  
Vuyyuru-521165
- 7)   
(ANEESA BEGUM) ..... Member Lecturer in English  
A.G & S.G.S Degree College,  
Vuyyuru-521165

**Agenda for B.O.S Meeting of General English for I & III SEMESTERS**  
**for the Academic Year 2021-22**

The following proposals are submitted as a part of the agenda for the consideration and approval of the honorable members of Board of Studies, at the meeting held on 9<sup>th</sup> November, 2021.

1. To recommend syllabi for 1<sup>st</sup> and 3<sup>rd</sup> semesters of I & II Degree students of all disciplines for the Academic Year 2021-22.
2. To Consider and approve the additional inputs and minor modifications if any, in the I & III Semester papers of General English.
3. To recommend the Model Question Papers of 1<sup>st</sup> and 3<sup>rd</sup> semesters of I & II Degree of all disciplines for the Academic Year 2021-22.
4. To recommend the Guidelines to be followed by the question paper setters in General English for the 1<sup>st</sup> and 3<sup>rd</sup> semester-end exams of I & II Year students of all disciplines.
5. To recommend the teaching and evaluation methods to be followed under Autonomous status.
6. To recommend topics for online teaching and evaluation patterns.
7. To consider and approve the implementation of Pedagogy methods like Quiz, classroom seminar, Assignment or Case study, Test, puzzles, viva and few more innovative methods in classroom teaching as indicated in the curricular plans.
8. To consider and approve to arrange Guest Lectures by Subject Experts @ 1(minimum) per Semester rounded up to more than 3 per academic year.
9. Any suggestions regarding Certificate/Add-on Courses, Seminars, Workshops, Guest Lectures and student competitions to be organized.
10. To note any changes in the syllabus if made by APSCHE for the admitted batch of I Semester of the academic year 2021-22.
11. Any other matter.

## **RESOLUTIONS**

1. Discussed and recommended the syllabus for 1<sup>st</sup> and 3<sup>rd</sup> semesters of I & II Degree students of all disciplines for the approval of the Academic Council.
2. Discussed and recommended the syllabi prescribed by APSCHE without any changes for 1<sup>st</sup> and 3<sup>rd</sup> semesters of I & II Degree students of all disciplines for the approval of the Academic Council.
3. Discussed and recommended the I & III Semester Model Question Papers of General English for the approval of the Academic Council.
4. Discussed and recommended the guidelines to be followed by the question paper setters of General English for 1<sup>st</sup> & 3<sup>rd</sup> Semesters of I & II year students of all disciplines for the approval of the Academic Council.
5. Discussed and recommended the teaching methodology to be taken up and the evaluation patterns to be done.

### **Teaching methods:**

Besides the conventional methods of teaching (The Direct Method, The Structural Approach), Grammar-Translation Method, Audio-lingual Method, Communicative Language Teaching (CLT), Task-Based Language Learning etc., are practiced. We use modern technology i.e. using of an LCD projector, display on U boards, you tube videos etc., for better understanding of concepts.

There are two components in the Valuation and Assessment of a student – Internal Assessment (IA) and Semester Examinations (SE).

#### **Internal Assessment (IA)**

##### **I SEMESTER**

- The maximum mark for IA is 25 and SE is 75 for theory. Out of these 25 marks, 20 marks are allocated for announced tests.
- Each IA written examination is of 1 hour 30 minutes duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks.
- Other Innovative Components will be for 5 Marks. The innovative component is for 5 marks, conducted during the class hours by the staff member/ in charge of the subject, in the form of assignments/ quiz/ seminars /presentations/Online/Open Book/Viva Voce/ Group work/ Mini Project/ Exhibition, etc. The topic and time for submission/ presentation will be announced by the staff member/ in charge of the subject in advance. Each student should explain and defend his/her presentation.
- There is no passing minimum for IA.

##### **Semester Examinations (SE)**

- A student should register himself/herself to appear for the Semester Examinations by payment of the prescribed fee.
- The Semester Examinations will be in the form of a comprehensive examination covering the entire syllabus in each subject. It will be of 3 hours duration, with maximum 75 marks, irrespective of the number of credits allotted to it.

- Even though the candidate is absent for two IA exams/obtain zero marks, the external marks are considered (if he/she gets 40/70) and the result shall be declared as 'PASS'.
- The pass mark shall be 30 out of 75 in the Semester end examination.
- The maximum marks for each Paper shall be 100.


### **III SEMESTER**

- The maximum mark for IA is 30 and SE is 70 for theory. Out of these 30 marks, 20 marks are allocated for announced tests.
- Each IA written examination is of 1 hour 30 minutes duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks.
- Other Innovative Components will be for 5 Marks. The innovative component is for 5 marks, conducted during the class hours by the staff member/ in charge of the subject, in the form of assignments/ quiz/ seminars /presentations/Online/Open Book/Viva Voce/ Group work/ Mini Project/ Exhibition, etc. The topic and time for submission/ presentation will be announced by the staff member/ in charge of the subject in advance. Each student should explain and defend his/her presentation. For attendance 5 Marks are allotted.
- There is no passing minimum for IA.

#### **Semester Examinations (SE)**

- A student should register himself/herself to appear for the Semester Examinations by payment of the prescribed fee.
  - The Semester Examinations will be in the form of a comprehensive examination covering the entire syllabus in each subject. It will be of 3 hours duration, with maximum 70 marks, irrespective of the number of credits allotted to it.
  - Even though the candidate is absent for two IA exams/obtain zero marks, the external marks are considered (if he/she gets 40/70) and the result shall be declared as 'PASS'.
  - The pass mark shall be 28 out of 70 in the Semester end examination.
  - The maximum marks for each Paper shall be 100.
6. Discussed and recommended the topics for online teaching to be taught and the evaluation patterns to be taken up.
  7. Considered and approved the implementation of Pedagogy methods like Quiz, classroom seminar, Assignment or Case study, Test, puzzles, viva and few more innovative methods in classroom teaching as indicated in the curricular plans.
  8. Considered and approved to arrange Guest Lectures by Subject Experts rounded up to 3 per academic year.
  9. Discussed and recommended to organize Seminars, Guest lectures, Workshops to enhance the knowledge of students besides conducting Certificate Course in Competitive English. It has been suggested that the Bridge Course may be conducted for the I year students before the commencement of regular classes. All these recommendations are forwarded for the approval of the Academic Council.
  10. Discussed and recommended to implement the 100% of the new syllabus introduced / made by APSCHE for the admitted batch of the I Semester for the academic year 2021-22. All these recommendations are forwarded for the approval of the Academic Council.
  11. Nil.

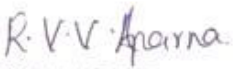
**Signatures of the BOS Members:**

  
**Dr.M.KOTESWARA RAO**  
(University Nominee)

  
**Dr.G.SRI LATHA**  
(Academic Council Nominee)

  
**(Ms.G.SONI)**  
(Academic Council Nominee)

  
**M.ROJA**  
(Member)

  
**R.V.V.APARNA**  
(Member)

  
**ANEESA BEGUM**  
(Member)

  
**Chairman**

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,  
VUYYURU – 521165**  
(An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam.)  
Accredited with “A” Grade by NAAC, Bengaluru  
Semester - I

ENGLISH PRAXIS COURSE-I  
**A COURSE IN COMMUNICATION AND SOFT SKILLS**

Course Code	ENGT11B	Course Delivery Method	Class Room/ Blended Mode - Both
Credits	03	CIA Marks	25
No.of Lecture Hours / Week	4	Semester End Exam Marks	75
Total No.of Lecture Hours	60	Total Marks	100
Year of Introduction:	Year of Offering: 2021-22	Year of Revision: -----	Percentage of Revision: 0%
CLASS:	I YEAR DEGREE (ALL COURSES)		

**Course objective:**

The aim of this course is to improve the speaking skills of the learners in regard to the sound-spelling relationship of the language appears anarchic and to introduce the basic Grammar and Vocabulary as well as reading skills. Another problem that many Indian languages face is English Word Accent.

**Course Outcomes:**

By the end of the semester, the students can acquire linguistic competence to be able to compete with the globalised world and become successful in all the challenges that they face. On successful completion of the paper, the students are introduced to communicative skills, to define, classify, and understand the methods of communication, to improve their LSRW skills, to enable them to practice those skills in their daily life by identifying instances of communication in the circumstances of their own.

- Introduced the students to the speech sounds of English in order to enable them to listen to English and speak with global intelligibility
- Enabled the students to speak English confidently and effectively in a wide variety of situations.
- Helped the students to improve their writing efficiency by refining their writing strategies.



**Academic Year 2021-22**  
**Changes made in the syllabus**  
**Semester-I General English**

Course content suggested by APSCHE	Additions	Deletion
<p><b>UNIT-I</b>  <b>Listening Skills</b></p> <ol style="list-style-type: none"> <li>1. Importance of Listening</li> <li>2. Types of Listening</li> <li>3. Barriers to Listening</li> <li>4. Effective Listening</li> </ol> <p><b>UNIT-II</b>  <b>Speaking Skills</b></p> <ol style="list-style-type: none"> <li>1. Sounds of English: Vowels and Consonants</li> <li>2. Word Accent</li> <li>3. Intonation</li> </ol> <p><b>UNIT – III</b>  <b>Grammar</b></p> <ol style="list-style-type: none"> <li>1. Concord</li> <li>2. Modals</li> <li>3. Tenses (Present/Past/Future)</li> <li>4. Articles</li> <li>5. Prepositions</li> <li>6. Question Tags</li> <li>7. Sentence Transformation (Voice, Reported Speech &amp; Degrees of Comparison)</li> <li>8. Error Correction</li> </ol> <p><b>UNIT-IV</b>  <b>Writing</b></p> <ol style="list-style-type: none"> <li>1. Punctuation</li> <li>2. Spelling</li> <li>3. Paragraph Writing</li> </ol> <p><b>UNIT-V</b>  <b>Soft Skills</b></p> <ol style="list-style-type: none"> <li>1. SWOC</li> <li>2. Attitude</li> <li>3. Emotional Intelligence</li> <li>4. Telephone Etiquette</li> <li>5. Interpersonal Skills</li> </ol>	<p>Nil</p>	<p>Nil</p>

## Learning Outcomes

*By the end of the course the learner will be able to :*

- Use grammar effectively in writing and speaking.
- Demonstrate the use of good vocabulary
- Demonstrate an understating of writing skills
- Acquire ability to use Soft Skills in professional and daily life.
- Confidently use the tools of communication skills

## ENGLISH PRAXIS COURSE-I A COURSE IN COMMUNICATION AND SOFT SKILLS

### SYLLABUS

Unit	Learning Units	Lecture Hours
I	<b>Listening Skills</b> 1. Importance of Listening 2. Types of Listening 3. Barriers to Listening 4. Effective Listening	10
II	<b>Speaking Skills</b> 1. Sounds of English: Vowels and Consonants 2. Word Accent 3. Intonation	10
III	<b>Grammar</b> 1. Concord 2. Modals 3. Tenses (Present/Past/Future) 4. Articles 5. Prepositions 6. Question Tags 7. Sentence Transformation (Voice, Reported Speech & Degrees of Comparison) 8. Error Correction	15
IV	<b>Writing</b> 1. Punctuation 2. Spelling 3. Paragraph Writing	10
V	<b>Soft Skills</b> 1. SWOC 2. Attitude 3. Emotional Intelligence 4. Telephone Etiquette 5. Interpersonal Skills	15

**REFERENCES:**

1. English praxis-I—A Course in communication and soft skills by S.B.Fathima Mary, Vivanta publishers 2021
2. English praxis-I—A Course in communication and soft skills by Himalaya Publishing House 2021.

**Suggested Co-Curricular Activities**

1. Elocution
2. Group discussion
3. Essay Writing
4. Creative Writing
5. Recitation

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,  
VUYYURU – 521165  
(An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam)  
Accredited with “A” Grade by NAAC, Bengaluru**

<b>ENGLISH</b>	<b>ENGT11B</b>	<b>2021-2022</b>	<b>B.A,B.Com &amp; B.Sc</b>
----------------	----------------	------------------	-----------------------------

**Time: 3 hours**

**Max Marks: 75**

**The Pattern of the Question Paper for Semester – I: ENGT11B**

**Semester - I**

\*\*\*\*\*

**SECTION – A**

**I. Answer any FIVE of the following questions. 5 x 5 = 25M**

(7 Paragraph questions should be given from UNIT – I (Listening Skills), UNIT-II (Speaking Skills) & UNIT – V (Soft Skills))

**SECTION – B**

**II. Answer any FIVE of the following questions. 5 x 3 = 15M**

(6 Paragraph questions should be given from UNIT – II (Speaking Skills) & UNIT-V (Soft Skills)).

**SECTION – C (LANGUAGE ACTIVITY) 35 M**

**III. Fill in the blanks with suitable articles. 6 x ½ = 3M**

**IV. Fill in the blanks with suitable prepositions. 6 x ½ = 3M**

**V. Fill in the blanks with the correct form of verbs given in the brackets. 5 x 1 = 5M**

**VI. Fill in the blanks with suitable concord of the following sentences 6 x ½ = 3M**

**VII. Write the correct question tags for the following statements 3 x 1 = 3M**

**VIII. Fill in the blanks with suitable auxiliary verbs. 4 x ½ = 2M**

**IX. Write the spelling of the following misspelt words 4 x ½ = 2M**

**X. Punctuate the following sentences. 2x1=2M**

**XI. Rewrite the following sentences as directed. 5x1=5M**

**XII. Correct the following sentences. 2x1=2M**

**XIII. Write a paragraph on any ONE of the following. 1x5=5M**

(Two topics should be given from UNIT – IV (Writing), from the topic of paragraph writing)

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,  
VUYYURU - 521165**  
*(An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam.)*  
**Accredited with “A” Grade by NAAC, Bengaluru**

<b>ENGLISH</b>	<b>ENGT11B</b>	<b>2021-2022</b>	<b>B.A,B.Com &amp; B.Sc</b>
----------------	----------------	------------------	-----------------------------

**Time: 3 hours**

**Max Mark: 75**

**Subject Code : ENGT11B**

**Pass Marks: 30**

**Semester – I**  
**A COURSE IN COMMUNICATION AND SOFT SKILLS – I**

\*\*\*\*\*

**Model Question Paper**

**SECTION- A**

**I. Answer any FIVE of the following questions.**

**5 x 5 = 25M**

1. Write vowel sounds with 3 examples each in three different positions. *CO2 LI*
2. Write all the consonants sounds with 3 examples in three different positions each. *CO2 LI*
3. Define intonation and describe the types of intonation with examples? *CO2 LI*
4. What is Emotional Intelligence and what are the tips to develop Emotional Intelligence?*CO5 LI.*
5. Write a note on different types of listening. *CO1 L4.*
6. What is attitude? What are the characteristics of Positive Attitude? *CO5 L*
7. What are the barriers to effective listening? *CO 1 L4*

**SECTION –B**

**II. Answer any FIVE of the following questions.**

**5 x 3 = 15M**

1. What is SWOC and what are the limitations of SWOC? *CO5 L2*
2. Explain any three stages of listening process.
3. What is intonation ? Give some examples.
4. What is etiquette? What are the examples of telephone etiquette? *CO5 LI*
5. Write a note on different types of listening. *CO1 L4*
6. Describe the traits of a good listener? *CO1 L2*

**SECTION –C**

**III. Fill in the blanks with suitable articles.**

*CO3 LI*

**6 x ½ = 3M**

If we ask\_\_\_\_(1) audience to reproduce what they have just heard in\_\_\_\_(2) presentation, we may often receive different versions of\_\_\_\_(3) same speech. This happens each member of\_\_\_\_(4) audience

listens differently. Each individual hears\_\_\_\_(5) message from his/her point of view and contextualizes it within their own experiences and perceptions to arrive at\_\_\_\_(6) interpretation of the matter presented.

**IV. Fill in the blanks with suitable prepositions. CO3 L1 6 x ½ = 3M**

I'm here \_\_\_\_ (1) express my views \_\_\_\_ (2)ragging. I believe ragging is a menace that is destroying the academic character \_\_\_\_ (3) many educational institutions. I consider ragging \_\_\_\_ (4) be an inhumane, unnatural and abusive form \_\_\_\_ (5) action which some senior students indulge \_\_\_\_ (6) so as to terrify 'fresher s', or newcomers, in educational institutions.

**V. Fill in the blanks with correct verb form. CO3 L3 5 x 1 =5M**

1. My father \_\_\_\_\_ (go) to gym every day.
2. We \_\_\_\_\_ (buy) a new car tomorrow.
3. They \_\_\_\_\_ (live)in this town since 2008.
4. She \_\_\_\_\_ (see) an accident yesterday.
5. You \_\_\_\_\_ (go) to market now.

**VI. Fill in the blanks with correct concord of the following sentences. CO3 L1 6 x ½ = 3M**

1. One lakh rupees \_\_\_\_\_ a lot of money.
2. Mathematics and English \_\_\_\_\_ my favourite subjects.
3. Most of the milk \_\_\_\_\_ gone.
4. Either Ram or Shyam \_\_\_\_\_ coming today.
5. Two-thirds majority \_\_\_\_\_ required for impeachment of the president.
6. Each boy and each girl\_\_\_\_\_ happy.

**VII. Write the question tags for the following sentences. CO3 L2 3 x 1=3M**

1. You haven't seen this film, \_\_\_\_\_?
2. She saw an accident, \_\_\_\_\_?
3. They made a kite, \_\_\_\_\_?

**VIII. Fill in the blanks with suitable modal verbs. CO3 L1 4 x ½ =2M**

1. You \_\_\_\_\_ never too old to learn.
2. I \_\_\_\_\_ sorry for what I have done.
3. Our guests \_\_\_\_\_ arrived.
4. \_\_\_\_\_ they good friends of him?

**IX. Write the correct spelling of the following words. CO4 L3 4 x ½ =2M**

1. dailoge
2. dictionary
3. parlament

4. acknowledge

**X. Punctuate the following sentences.**

**CO4 L1**

**2 x 1= 2M**

1. hari said I saw him today
2. what a lovely view you have hear ram said

**XI. Rewrite the following sentences as directed. CO4 L2**

**5 x 1=5M**

1. Shut the door. [change into passive voice]
2. The crew paved the entire stretch of highway [change into passive voice]
3. Rahul said, "I will have to reach home by 8.30." [change into indirect speech]
4. The boy said to the girl, "we are going on a holiday". [change into indirect speech]
5. The Pacific Ocean is deeper than the Arctic Ocean. [change into positive degree]

**XII. Correct the following sentences.**

**CO4 L2**

**2 x 1 =2M**

1. You must practice to speak English.
2. Unless you do not eat , you will not be strong.

**XIII. Write a paragraph on ONE of the following. CO4 L2**

**1 x 5 = 5M**

1. Your favourite hobby.
2. Impact of TV on both children and youth.

\*\*\*\*\*

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,  
VUYYURU – 521165**  
*(An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam.)*  
**Accredited with “A” Grade by NAAC, Bengaluru**

**Semester – III (CBCS)  
ENGLISH PRAXIS COURSE-III**

**A COURSE IN CONVERSATIONAL SKILLS**

<b>Course Code</b>	<b>ENG301</b>	<b>Course Delivery Method</b>	<b>Class Room/ Blended Mode - Both</b>
<b>Credits</b>	<b>03</b>	<b>CIA Marks</b>	<b>30</b>
<b>No.of Lecture Hours / Week</b>	<b>4</b>	<b>Semester End Exam Marks</b>	<b>70</b>
<b>Total No.of Lecture Hours</b>	<b>60</b>	<b>Total Marks</b>	<b>100</b>
<b>Year of Introduction:</b>	<b>Year of Offering: 2021-22</b>	<b>Year of Revision: -----</b>	<b>Percentage of Revision: 0%</b>
<b>CLASS:</b>	<b>II YEAR DEGREE (ALL COURSES)</b>		

**COURSE OBJECTIVE:**

The objectives of the Syllabus are to enrich students’ reading, writing, and learning abilities so they can pursue their personal, academic and career goals through the acquisition and improvement of English Language skills. This course is designed in a manner suitable for the student to use personal and cultural knowledge to interpret the information presented in the text and 'create' meaning. The aim of this course is also to improve the speaking skills of the learners in regard to the sound- spelling relationship of the language appears anarchic.

**COURSE OUTCOMES:**

Being able to converse in a language in all situations is mastering it. Praxis III made efforts to help the students in helping this skill through speeches, autobiography and interviews of some world-famous personalities. The wonderful interviews chosen for Praxis-III, is a clear indication that at the end of the course, the student would be able to converse confidently, ask or answer in English language. The Units conclude with a series of exercises to hone language skills and will assist students in the curricular goal of self - learning.

- Students will become accomplished, active readers who appreciate ambiguity and complexity.
- Students will be able to write effectively for a variety of professional and social settings. They will practice writing as a process of motivated inquiry, engaging other writers’ ideas as they explore and develop their own.
- To enhance the confidence levels by acquiring knowledge of Role-plays, Debates and Descriptions.
- Enhancing basic skills to become a good communicator.
- To help students discover their latent leadership qualities and their social role of involvement.



**Academic Year 2021-22**  
**Changes made in the syllabus**  
**Semester-III General English**

Course content suggested by APSCHE	Additions	Deletion
<p><b>UNIT-I</b>  <b>Speech</b>            1. Tryst with Destiny - Jawaharlal Nehru  <b>Skills</b>            2. Greetings            3. Introductions</p> <p><b>UNIT-II</b>  <b>Speech</b>            1. Yes, We Can                Barack Obama  <b>Interview</b>            2. A Leader Should Know How to Manage Failure Dr.A.P.J.Abdul Kalam/India Knowledge at Wharton  <b>Skills</b>            3. Requests</p> <p><b>UNIT-III</b>  <b>Interview</b>            1. Nelson Mandela's Interview                With Larry King  <b>Skills</b>            2. Asking and Giving Information            3. Agreeing and Disagreeing</p> <p><b>UNIT-IV</b>  <b>Interview</b>            1. JRD Tata's Interview      With T.N.Ninan  <b>Skills</b>            2. Dialogue Building            3. Giving Instructions/Directions</p> <p><b>UNIT-V</b>  <b>Speech</b>            1. You've Got to Find What You Love                Steve Jobs  <b>Skills</b>            2. Debates            3. Descriptions            4. Role Play</p>	<p>Nil</p>	<p>Nil</p>

## Learning Outcomes

*By the end of the course the learner will be able to :*

- Speak fluently in English
- Participate confidently in any social interaction
- Face any professional discourse
- Demonstrate critical thinking
- Enhance conversational skills by observing the professional interviews

## SYLLABUS

Unit	Learning Units	Lecture Hours
I	<b>Speech</b> 1. Tryst with Destiny - Jawaharlal Nehru <b>Skills</b> 2. Greetings 3. Introductions	10
II	<b>Speech</b> 1. Yes, We Can Barack Obama <b>Interview</b> 2. A Leader Should Know How to Manage Failure Dr.A.P.J.Abdul Kalam/India Knowledge at Wharton <b>Skills</b> 3. Requests	10
III	<b>Interview</b> 1. Nelson Mandela's Interview With Larry King <b>Skills</b> 2. Asking and Giving Information 3. Agreeing and Disagreeing	15
IV	<b>Interview</b> 1. JRD Tata's Interview With T.N.Ninan <b>Skills</b> 2. Dialogue Building 3. Giving Instructions/Directions	10
V	<b>Speech</b> 1. You've Got to Find What You Love Steve Jobs <b>Skills</b> 2. Debates 3. Descriptions 4. Role Play	15

## REFERENCES:

1. ENGLISH PRAXIS III – A Course in Conversational Skills by S.B.Fatima Mary, VIVANTA PRESS -2021.
2. ENGLISH PRAXIS III – A Course in Conversational Skills by Himalaya Publishers – 2021.

### **Suggested Co-Curricular Activities**

1. Elocution
2. Group discussion
3. Essay Writing
4. Creative Writing
5. Recitation
6. Debate

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYYURU -  
521165**

*(An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam.)*

Accredited at 'A' Grade by NAAC

<b>ENGLISH</b>	<b>ENG 301C</b>	<b>2021-2022</b>	<b>B.A,B.Com &amp; B.Sc</b>
----------------	-----------------	------------------	-----------------------------

**The Pattern of the Question Paper for Semester – III: ENG 301C**

\*\*\*\*\*

**Section - A**

**I. Answer any FIVE of the following questions.** **5x5=25M**  
(Any Six essay questions should be given from all speeches and interviews in the given syllabus)

**Section – B**

**II. Answer any FIVE of the following questions.** **5x2=10M**  
(Any Six short answer questions should be given from all speeches and interviews in the given syllabus)

**Section – C**

- III. GREETINGS** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 08-17)
- IV. INTRODUCTIONS** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 17-26).
- V. V. REQUESTS** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 40-46)
- VI. ASKING AND GIVING INFORMATION** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 58-63)  
(OR)
- VII. AGREEING DISAGREEING**  
(This question should be given from the prescribed text book, page no's 63-72)
- VIII. DIALOGUE BUILDING** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 78-85)
- IX. GIVING INSTRUCTIONS / DIRECTIONS** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 86-97)
- X. DEBATES** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 105-112)
- XI. DESCRIPTIONS** **1x4=4 Marks**  
(This question should be given from the prescribed text book, page no's 113-120)
- XII. ROLE-PLAY** **1x3=3 Marks**  
(This questions should be given from the prescribed text book, page no's 121-124)

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYYURU -  
521165**

*(An Autonomous College in the Jurisdiction of Krishna University, Machilipatnam.)*

Accredited at 'A' Grade by NAAC

<b>ENGLISH</b>	<b>ENG 301C</b>	<b>2021-2022</b>	<b>B.A,B.Com &amp; B.Sc</b>
----------------	-----------------	------------------	-----------------------------

**Time: 3 hours**

**Max Mark: 70**

**Question Paper Model**

**Section – A**

**I. Answer any FIVE of the following questions.**

**5x5=25M**

1. What was the pledge that Jawaharlal Nehru wanted every citizen of India to take?
2. What does Barack Obama say about his victory in the American Presidential Election?
3. How did Steve Jobs keep himself going after getting fired from Apple?
4. What was the lesson about leadership that Abdul Kalam learnt from Prof.Satish Dhawan?
5. Why did Nelson Mandela say that prison was not a waste of time?
6. What are the major changes in Indian Business that were noticed by J.R.D.Tata?

**Section – B**

**II. Answer any FIVE of the following questions.**

**5x2=10M**

1. What was the ambition of the greatest man of our generation?
2. Why did Steve Jobs become interested in Calligraphy?
3. What was the achievement of freedom as a faithful movement for India?
4. How does Dr.A.P.J.Abdul Kalam describe his spirituality?
5. How does Tata describe Birla?
6. What does freedom and power bring according to Nelson Mandela?

**Section – C**

**III. Mr.Krishna meets Ms.Bhaskar, his son's teacher, at the school. Write a dialogue between them.**

**1x4=4M**

**IV. Anvesh from Hifi Technologies, Hyderabad, goes to the office at Hyderabad to meet the Company's Finance Manager, on his prior appointment. Anvesh introduces himself to the Finance Manager's secretary, explaining who he is, where he is from and why he is there. Construct a dialogue between Anvesh and Secretary.**

**1x4= 4M**

- V. List any five debate points on the Impact of Social Media on Youth. 1x4= 4M
- VI. Build up a conversation based on the hints given below. 1x4= 4M  
*Good morning – new to this place – in the Air Force – what do you do? – how fortunate! Need to enroll my daughter in a school – tell me about good schools in Visakhapatnam – thank you.*
- VII. Rahul is a new student in the college. He asks Rajesh for directions to the library. Give some directions. 1x4= 4M
- VIII. Anu asks her friend Rajesh to get her college admission form from the college. Write a dialogue of request. 1x4= 4M
- IX. Construct a dialogue between the customer and a shop keeper seeking information about the price of the groceries. 1x4= 4M
- X. Your parents insist that you should cut down your extra-curricular activities in order to focus on your studies. Construct a dialogue either agreeing or disagreeing with your parent. 1x4= 4M
- XI. Plan a role play between a Principal and a parent asking him/her to take care of his/her child's attendance. 1x3= 3M

\*\*\*\*\*

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF HINDI**

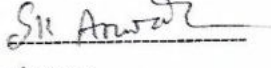

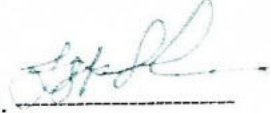
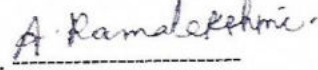

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**29-10-2021**

Minutes of the meeting of Board of Studies in Hindi for the Autonomous Courses of A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru at 11.00AM on 29-10-2021 in the Department of Hindi.

**Members Present:**

1.   
Sk. Anwar  
Chairman  
Head of the Department of Hindi  
AG & SGS Degree College  
Of Arts & Science, Vuyyuru.
2.   
Dr. V. Mohana Rao  
University  
Representative  
Lecturer in Hindi, pricipal  
KRK Govt Degree college.  
Singarayakinda, Addanki  
Prakashandistrict.
3.   
Dr. K. Srikrishna  
Academic Council  
Nominee  
Asst. Professor,  
Department of Hindi,  
Aacharya Nagarjuna University.  
Guntur.
4.   
Smt. A. Ram Lakshmi  
Academic Council  
Asst. Professor,  
Nominee Department of Hindi,  
S. D.M siddharthamahilakalashala,  
Vijayawada.
5.   
Dilshad Begum  
Student's  
Representative  
Lecturer in Chemistry  
AG & SGS Degree College of  
Arts & Science, Vuyyuru

**Agenda for BOS Meeting**

1. To discuss about the syllabi, model question papers and guidelines of I and III semester of I & II degree in Hindi for the academic year 2021-2022.
2. To discuss about the change of question papers of I & III semester for the academic year 2021-22
3. Any other matter.

**Resolutions**

1. It is unanimously resolved that there is no change in the syllabi I & III semester of First And second degree in Hindi for the academic year 2021-22.



2. It is unanimously resolved that there is no change in the model question papers I & III semester of 1<sup>ST</sup> & 2<sup>ND</sup> degree in Hindi for the academic year 2021-23
3. It is unanimously resolved to follow the evaluation ratio 70:30(External and Internal) for the I & II degree for the academic year 2021-22
4. Nil.

S. K. Anwar

HINDI	HINT11A	2021-'22	B.A.,B.Com.,B.Sc.
-------	---------	----------	-------------------

SEMESTER-I

Credits – 3

HINDI - I

COURSE OUTCOMES:

- CO1 - मानव मूल्यों को पहचानकर समाज कल्याण हेतु देने के लिए तैयार रहना ।  
CO2 - आधुनिक युग की भावनाओं को पहचानकर सामाजिक समस्याओं का सामना करते हुए, निरंतर आगे बढ़ना ।  
CO3 - विद्यार्थियों को शब्दावली से एक भाषा से दुसरे भाषा का अन्ववाद कर सकता है ।  
CO4 - छात्रों को इस व्याकरण के द्वारा भाषा में निपुणता आती हैं ।  
CO5 - छात्रों के इस पत्र-लेखन द्वारा लिखित कार्य बढ़ता है और संप्रेषण का विकास होता है ।

I. गद्य संदेश :

1. साहित्य की महत्ता
2. सच्ची वीरता
3. मित्रता

II. कथा - लेक :

1. मुक्तिधन
2. गूदड साई
3. उसने कहा था

III. व्याकरण : कार्यालयीन हिन्दी शब्दावली

(हिन्दी से अंग्रेजी में बदलना तथा अंग्रेजी से हिन्दी में बदलना)

IV. व्याकरण : लिंग, वचन, उल्टे शब्द, काल, वाच्य, वाक्य शुद्ध कीजिए

V. पत्र-लेखन : पत्र-लेखन (मित्र को पत्र, पिताजी को पत्र)

Recommended Books:

1. गद्य संदेश - Dr. V.L.Narasimham Siva Koti
2. कथा लेक - Dr. Ghana Shyam

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

SEMESTER-I

COURSE CODE-HINTIIA

Title of the Paper:Hindi-I

Total Marks:70

**SECTION-I**

। निम्न लिखित प्रश्नों का उत्तर लिखिए।

**4×5=20**

1.(a)जीवन मे साहित्य की क्या आवश्यकता है? साहित्य द्वारा सभ्यता की परीक्षा किस प्रकार हो सकती हैं?

(अथवा)

(b)वीरता किसे कहते है? लेखक का 'सच्ची वीरता' से क्या अभिप्राय है?

2.(c)रहमान का चरित्र-चित्रण कीजिए।

(अथवा)

(d) गूदड़ साई का शीर्षक पर अपना उद्देश्य प्रकट कीजिए।

3.(e) काल किसे कहते है तथा उसके कितने प्रकार है?

(अथवा)

(f) वाच्य किसे कहते है तथा उसके कितने प्रकार है?

4.(g) नीचे दिए गए शब्दों का लिंग बदलकर लिखिए।

1. विद्वान 2.अध्यापक 3.मोर 4.ठाकुर 5.धोबी

(अथवा)

(h) नीचे दिए गए शब्दों का वचन बदलकर लिखिए।

1.लड़की 2.वीर 3.सेना 4. रुपया 5.कविता

**SECTION-II**

**1×10=10**

5.(a) 'मित्रता' पाठ का सारांश लिखिए।

(अथवा)

(b)'साहित्य की महता' पाठ का सारांश लिखिए।

**SECTION-III**

**1×10=10**

6.(a) 'मुक्तिधन' कहानी का सारांश लिखिए।

(अथवा)

(b) 'उसने कहा था' कहानी का सारांश लिखिये।

**SECTION-IV**

7.(a) किन्हीं पाँच शब्दों को अंग्रेजी से हिंदी में अनुवाद कीजिए।5×2=10

- 1.Acceptance 2.Ballot Officer 3.Chairman 4.Duty 5.Supervisor
- 6.High Court 7.Fair copy 8.Eligibility 9. Passport 10.Accountant

(अथवा)

(b) किन्हीं पाँच शब्दों को हिंदी से अंग्रेजी में अनुवाद कीजिए।

1. प्रशासन 2. परिपत्र 3. गोपनीय 4. स्पष्टीकरण 5. राजदूत
- 6.निर्देशक 7.शिक्षा-अधिकारी 8.कुलपति 9.महा प्रबंधक 10.अनुवादक

8.(a)किन्हीं पाँच शब्दों के उल्टे शब्द लिखिए। 5×2=10

- 1.वीरता 2. अच्छा 3.नया 4.आना 5.भिन्न 6.सस्ता 7.मित्र 8. लेना

(अथवा)

(b)वाक्य शुद्ध कीजिए।

- 1.मोहन पुस्तक पढ़ा।
- 2.सीता ने चोर आम खाया।
- 3.राम ने गया।
- 4.दशरथ की तीन रानियाँ थीं।

5.चोरी कोन किया?

**SECTION-V**

**1×10=10**

9.(a)पुस्तकें खरीदने के लिए पैसे माँगते हुए अपने पिताजी के नाम पर पत्र लिखिए।

(अथवा)

(b)हिंदी सीखने की आवश्यकता के बारे में बताते हुए अपने मित्र को पत्र लिखिए।

HINDI	HINT01A	2021-22	B.A.,B.Com.,B.Sc.
-------	---------	---------	-------------------

SEMESTER-III/IV

Credits – 3

HINDI - III

COURSE OUTCOMES:

- CO1 - इस कविताओं के द्वारा कवियों का जीवन परिचय और उनके समाज सुधारक दोहों का महत्व के बारे में मालूम होता है और मानव मूल्य बारे समझ सकते हैं
- CO2 - हिन्दी साहित्य के इतिहास के द्वारा हिन्दी भाषा की महत्व और कविताओं की महत्व के बारे में समझ सकते हैं।
- CO3 - समाज कल्याण विषयों को समझकर अपना ज्ञान बढ़ाते हैं ।
- CO4 - भाषा में ज्ञान प्राप्त करके, दूसरो से आसानी से संप्रोषित करना सीखेंगे।
- CO5 - सरकारी व्यवस्थाओं को लेख लिखना, भाषा की विशेषता, समाज में सरकारी भाषा सीखकर दूसरों को आदर्शवान बन सकेंगे ।

I. काव्य दीप :

- कबीरदास - साखी - 1-10,  
सूरदास - बालवर्णन,  
मात्रु भूमि - मैथिलीशरण गुप्त,  
तोडती पत्थर - सूर्यकांत त्रिपाठी निराला  
गीत फरोश - भवानी प्रसाद मिश्र

II. हिन्दी साहित्य का इतिहास :

- काल विभाजन-आचार्य रामचन्द्र शुक्ल जी के अनुसार,  
भक्ति काल: ज्ञानाश्रयी शाखा - कबीर,  
प्रेमाश्रयी शाखा - जायसी

III. साधारण निबन्ध : समाचार पत्र, पर्यावरण और प्रदूषण, बैकारी की समस्या, कंप्यूटर

IV. अनुवाद : अनुवाद अभ्यास

V. प्रयोजनमूलक हिन्दी : परिपत्र, कार्यालय ज्ञापन, राष्ट्रभाषा हिन्दी

Recommended Books:

1. गद्य संदेश - Dr. V.L.Narasimham Siva Koti  
2. कथा लेक - Dr. Ghana Shyam



12. (अ) हिन्दी में अनुवाद कीजिए ।

5 X 2 = 10M

- (i) India is our country
- (ii) We should respect our parents
- (iii) How many students are there in the class room?
- (iv) Where are you going now?
- (v) This is our college.

अथवा

(आ) अंग्रेजी में अनुवाद कीजिए ।

- (i) हम कॉलेज जाते हैं ।
- (ii) हिन्दी हमारी राष्ट्रभाषा है ।
- (iii) रमा नाचती है ।
- (iv) मानव सेवा ही माधव सेवा है ।
- (v) कल रविवार था ।

13. किसी एक पर टिप्पणी लिखिए ।

- (i) परिपत्र
- (ii) कार्यालय ज्ञापन
- (iii) राष्ट्र-भाषा हिन्दी





**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF HISTORY**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**30-10-2021**

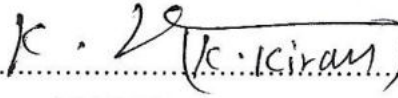
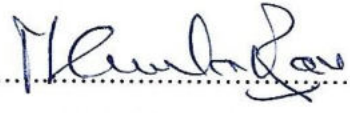
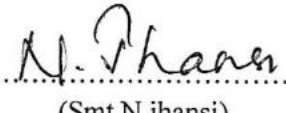
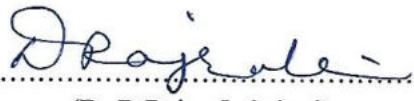
**AG&SG SIDDHARTHA DEGREE COLLEGE OF ARTS and SCIENCE**  
**(AUTONOMOUS) VUYURU**

**ACADEMIC YEAR – 2021 - 2022**

**Minutes of the meeting of the Board of Studies in History of AG & SG Siddhartha Degree College of Arts & Science, Vuyuru, held at 10.00 A.M ON 30-10-2021 In the Department of History.**

**Sri. K.Kiran, HOD, History has Presided over the BOS meeting**

Members Present:

- 1)  ..... Chairman  
( Sri.K.Kiran) Head, Department of History  
AG & SG S Degree College of Arts & Science  
Vuyuru-521165
- 2)  ..... University Head, Department of History  
(Dr.M.Suseela Rao) Nominee Government Degree College  
Mylavaram.
- 3)  ..... Academic Council Head, Department of History  
(Smt.N.jhansi) Nominee SDMSMahilaKalasala,  
Vijayawada
- 4)  ..... Academic Council Lecturer in History  
(Dr.D.Rajya Lakshmi) Nominee Government Degree college  
Avanigadda

## AGENDA

1. To Review and recommend any changes in the syllabi , Model Question Papers and Guidelines of 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> Semesters of I, II and III Year B.A. History Papers for the Academic Year 2021-2022.
2. To Discuss and recommend the pattern of internal Assessment , Guidelines and Model Question Papers in 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> Semesters of B.A Degree History papers for the Academic Year 2021-2022.
3. To Recommend the guidelines to be followed by the Question Paper Setters in Economics for the 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> Semester-end exams.
4. To Recommend the teaching and evaluation methods to be followed under the Autonomous Status.
5. To Propose the panel of Question paper setters and Examiners.
6. To recommend the conduction of Value Added Course for I BA Students
7. To Suggest innovative methods of teaching.
8. Any other matter.

## RESOLUTIONS:

1) It is Resolved to continue the same syllabi under CBC System approved by the Academic council of 2020- 2021 for 1<sup>st</sup> Degree in I Semester & III Degree in V Semester History papers, of B.A Classes.

**The APSHE New syllabus was introduced in the I Semester of I Degree B.A from the Academic year 2020 – 2021 and in the III Semester of II Degree B.A From the Academic year 2021 – 2022.**

- 2) Out of maximum 100 marks in each paper 30 marks shall be allocated for Internal Assessments regarding III and V Semesters.
  - A) To implement 30 marks for internal assessment and 70 marks for External Assessment from the academic year 2019-20 and that is also implemented to the III and V Semesters from 2020-21 Academic year and 2021 – 2022 Academic year also.
  - B) Out of these 30 marks, 20 marks are allocated for internal tests, 5 marks are allocated for assignment for III and V Semesters. The two tests will be conducted and average of these two tests shall be deemed as the marks obtained by a student, and remaining 5 marks are allocated for attendance.
- 3) Out of maximum 100 marks 25 Marks shall be allocated for Internal Assessments Regarding the I Semester from the Academic year 2021 – 2022.**
  - A) To implement 25 Marks for Internal Assessments and 75 Marks for External Assessment regarding the I Semester from the Academic year 2021 – 2022.**
  - B) Out of these 25 marks, 20 Marks are allocated for internal tests, 5 marks are Allocated for assignment/ attendance Regarding the I Semester from the Academic year 2021 – 2022.**
- 4) Discussed and recommended the syllabi, Model question papers under CBC system and guidelines to be followed by the question paper setters of 1<sup>st</sup> semester of I, III and V semesters of B.A Classes for the Academic year 2021-2022.
- 5) To follow the teaching and evaluation methods, it is also resolved to use various other methods like Group discussions, Quiz, Organizing Seminars, Guest Lectures and

Workshops to upgrade the knowledge of the students and impart new skills of learning as frequently as possible.

- 6) 5. It is resolved to conduct Value added course in Travel & Tourism for I BA Students
- 7) Resolved to authorize the chairman of Board of studies to suggest the panel of paper setters and Examiners to the controller of Examinations as for the requirement.
7. It is resolved to follow further changes if any in the syllabus by the competent Authority.

*K. V. Kishore*  
Chairman

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**

**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

<b>HISTORY</b>	HIS101	2021-22	B.A/HEP
----------------	--------	---------	---------

**SEMESTER-1** Course -1  
No. of Credits: 4

**(ANCIENT INDIAN HISTORY & CULTURE FROM INDUS VALLEY CIVILIZATION TO 13<sup>TH</sup> CENTURY A. D) (NEW SYLLABUS)**

**Learning objectives:**

1. To Identify the various kinds of sources and various stages of Indian civilization and religions like Buddhism and Jainism
2. To impart knowledge about religions like Buddhism and Jainism and Mouryan empire.
3. Inculcating awareness on ancient kingdoms of south Indian rulers.
4. Enlighten them with great Indian rulers like Gupta 's and Harshvardhan.
5. To provide the knowledge about the Cholas and Kakatiyas

**Course Outcomes:**

1. It encourages students to think explicitly about the aims of Indian history and culture
2. Acquire knowledge of Indian religions such Buddhism and Jainism. Acquainted with Indian kingship and culture -Mouryas and Satavahanas
3. Evaluate the south Indian administration and cultural contribution of Pallavas.
4. Ancient knowledge of golden age Guptas and cultural contribution oh Harsha.
5. Evaluate the administration of Cholas and greatness of Kakatiyas.

## SYLLABUS

**Unit - 1** **12 hrs**

- 1.1- Ancient Indian Civilization (from Circa 3000 BC to 6<sup>th</sup> BC):
  - 1.2 Indus Valley Civilization - Salient Features
  - 1.3 Vedic Age - Society, Polity, Economy, Culture during early and later Vedic period ( On line)

**Unit - II** **12 hrs**

- 2.1- Ancient Indian History & Culture (6<sup>th</sup> Century BC to 2<sup>nd</sup> Century AD):
- 2.2- Doctrines and Impact of Jainism and Buddhism;
- 2.3- Mauryan Administration, Society, Economy & Culture - Ashoka's Dharma;
- 2.4- Kanishka's Contribution to Indian Culture (On line)

**Unit - III** **12 hrs**

- 3.1- History & Culture of South India (2<sup>nd</sup> Century BC to 8<sup>th</sup> Century AD):
- 3.2 Sangam Literature; Administration, Society, Economy and Culture under Satavahanas
- 3.3 Cultural contribution of Pallavas (On line)

**Unit - IV** **12 hrs**

- 4.1- India from 3<sup>rd</sup> century AD to 8<sup>th</sup> century AD: Administration, Society, Economy, Religion, Art, Literature and Science & Technology under Guptas - Samudragupta.
- 4.2- Cultural contribution of Harsha:
- 4.3 Arab Conquest of Sind and its Impact

**Unit - V** **12 hrs**

- 5.1- History and Culture of South India (9<sup>th</sup> century AD to 13<sup>th</sup> century AD):
- 5.2 Local Self Government of Cholas
- 5.3 Administration, Society, Economy and Culture under Kakatiyas - Rudramma Devi

## **CO-CURRICULAR ACTIVITIES AND ASSESSMENT METHODS:**

### Continuous Evaluation:

1. Monitoring the students progress of learning by Class Tests.
2. Map pointing
3. Projects, Assignments and Group Discussions, Enhances critical thinking skills and Personality.
4. Semester-End Examination: Critical indicator of students learning and teaching methods adopted by teachers throughout the semester

## **REFERENCES:**

1. A.L. Basham, The Wonder That Was India
2. D.N.Jha, Ancient India
3. D.D.Kosambi, An Introduction to the Study of Indian History
4. D.P.Chattopadhyay, Science and Society in Ancient India
5. B.N.Mukherjee, The Rise and Fall of the Kushana Empire
6. K.A. NilakanthaShastri, A History of South India
7. R.C.Majumdar, K.K.Dutta&H.C.RoyChowdhuri (ed.), Advanced History of India
8. Kunkum Roy, The Emergence of Monarchy in North India: eighth to fourth centuries BC
9. RomilaThapar (et. al). India: Historical Beginnings and the Concept of the Aryan
10. M.L.K. Murthy, Pre-and Protohistoric Andhra Pradesh upto 500 B.C., New Delhi, 2003
- 11 K. Sathyanarayana, A Study of the History and Culture of Andhras



**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**

**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam

HISTORY Model Question Paper

(NEW MODEL PAPER)

B.A/ HEP – I to VI semesters

Time : 3 hrs

Max. Marks : 75

**PART – A**

I. Answer any FIVE of the following : 5 x 5=25 M  
(one Questions to be set from each unit)

1. Explain the Archeological Sources Co1 L2
2. Explain Mahavira and his teachings Co1 L2
3. Analyse Ashoka's contributions to Buddhism Co2 L3
4. Explain the role of kanishka.Co2 L2
5. What are the main aspects of sangam age Co3 L1
6. Estimate the invasions of SamudraGupta Co4 L4
7. Analyse Arab invasions. Co4 L3
8. Estimate the role of Raja raja chola Co5 L4

**PART – B**

II. Answer any FIVE of the following: 5 x 10= 50 M  
(one Questions to be set from each unit)

1.
  - A) Explain about the Indus Valley Civilization. Co1 L2  
OR
  - b.)What are the main features of Vedic civilization Co1 L1
2.
  - A).Explain Early life and teachings of Buddha. Co2 L2  
OR
  - b.)Examine about Mauryan administration Co2 L3
3.
  - A)Explain the general conditions of Satavahanna's. Co3 L2  
OR
  - b.)Define the cultural contribution of pallava's Co3 L1
4.
  - A)Illustrate the Golden age of Gupta's Co4 L2  
OR
  - b.)Define the role of harshavardhana in Indian History Co4 L1
5.
  - A) Explain Chola's administration Co5 L2  
OR

b.)Examine the administration Of Kakatiyas Co5 L3

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**

**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam  
(2021 – 2022)

**PROGRAMME: THREE-YEAR B.A.**

(With History, Economics and Political Science Disciplines)

**Course Code: HIS-301**

**Domain Subject: History**

Semester-wise Syllabus under CBCS

I Year B. A. – Semester – III

**Course 3: MODERN INDIAN HISTORY & CULTURE (1764-1947 A. D)**

**Learning Outcomes:**

After successful completion of this course, the student will be able to:

- Unearth the true nature of the British rule and its disastrous impact on Indian economy and society
- Gauge the disillusionment of people against the Company's rule even during the early 19th century
- Assess the causes and effects of Reformation movements and also inspire the public to overthrow inequalities of the present day society
- Rise above petty parochial issues after understanding the sacrificial saga of freedom struggle
- Evaluate the undercurrent of communal politics that led to India's partition and identify the enemies of India's integrity and sovereignty
- Visualize where places are in relation to one another through map pointing

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**

**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam  
(2021 – 2022)

SEM-III

**Syllabus:**

- Unit - 1 Policies of Expansion –Warren Hastings, Cornwallis - Subsidiary Alliance & Doctrine of Lapse – Causes & Results of 1857 Revolt – Lytton, Rippon, Curzon  
Social, Religious & Self-Respect Movements – Raja Rammohan Roy,
- Unit - II DayanandaSaraswathi, Swami Vivekananda, JyotibaPhule, Narayana Guru,  
Periyar, Dr. B. R. Ambedkar
- Unit - III Causes for the growth of Nationalism - Freedom Struggle from 1885 to 1920:  
Moderate Phase – Militant Phase: Vandemataram Movement-Home Rule  
Movement
- Unit - IV Freedom Struggle from 1920 to 1947: Gandhiji’s Role in the National  
Movement – Revolutionary Movement – Subhas Chandra Bose
- Unit - V Muslim League & the Growth of Communalism – Partition of India – Advent  
of Freedom - Integration of Princely States into Indian Union – SardarVallabhai  
Patel

## References:

- 1 Anil Seal, Emergence of Indian Nationalism
- 2 Banerjee, Sekhar, From Plassey to Partition
- 3 Bipan Chandra, Rise and Growth of Economic Nationalism in India
- 4 Chandra, Bipan, et. al., India's Struggle for Independence
- 5 Bipan Chandra, Modern India
- 6 Joshi, P.C., Rammohun and the Forces of Modernisation in India
- 7 R.P.Dutt, India Today

## Mandatory Co-Curricular Activity:

Map pointing should be a compulsory activity as it helps student to understand vividly and clearly than the text and should be made part of Internal Examination by allotting marks for this skill-based activity.

## Suggested Co- Curricular Activities:

- @ Debates
- @ Viva voce interviews
- @ Quiz Programs
- @ Photo Album
- @ Recording local history
- @ Role Play of freedom struggle events
- @ Organizing photo exhibition on freedom fighters
- @ Celebration of important events/personalities
- @ Conducting Philately
- @ Examinations(Scheduled and surprise tests)
- @ Students may be asked to prepare a project on the difference between Mughal and British administration
- @ Encourage students to write their autobiography or biography of their inspiring Personalities

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**

**A.P- 521165b (2021 – 2022)**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

(2021 – 2022)

**II BA.Semester – III (CBCS) Paper – III**

**Subject; History**

**Title of the Paper – MODERN INDIAN HISTORY & CULTURE (1764-1947 A. D)**

**Paper Code ; HIS-301 (w .e. f 2021 - 2022) Pass Marks: 28**

Time : 3Hrs

Max. Marks : 70

Model Question Paper

**SECTION – A**

Answer any TWO of the following

2x5=10 M

1. Home Rule League.
2. Swamy Vivekananda.
3. Identify the Places in Indian Map  
A) Delhi B) Tanjavor C) Meerat D) Kanpur E) Ayodhya.
4. Identify the Places in Indian Map  
A) Kashmir B) Hyderabad C) Junagadh D) Patna E) Bengal.

**SECTION – B**

Answer any FOUR of the following

4x15=60 M

5. Describe about the causes of 1857 Revolts
6. Give a brief account on contribution of Raja Rama mohan Rai to Socio – Religious movements.
7. Explain the role of Dr.B.R Ambedkar in Social Reforms.
8. Explain about the Swamy Vivekananda
9. Write an Essay on Vandematharam Movement.
10. Explain about the Non Cooperation Movement.
11. Explain the Role of Gandhiji in Indian National Movement.
12. Describe the Role of Valla bhai Patel in Integration of province states in India.

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**  
**A.P- 521165** (2021 – 2022)

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

SUBJECT- History	HIS 301	II B.A
------------------	---------	--------

**TITLE: MODERN INDIAN HISTORY & CULTURE (1764-1947 A. D)**

Semester – III

Guidelines to the Paper Setter

Section	Unit – I	Unit – II	Unit – III	Unit - IV	Unit-V
A 5 Marks Questions	1	1	1	---	1
B 15 Marks Questions	2	2	1	2	1
Weightage	35	35	20	30	20

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**

**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)  
(2021 – 2022)

**III BA History Syllabus:: Semester – V (CBCS) Paper – V**

**Title of the Paper :**

**Age of Rationalism and Humanism –The World Between 15<sup>th</sup>& 18<sup>th</sup> Centuries.**

**Paper Code; HIS-501C (w .e. f . 2020 - 2021)**

**No.of Hours per week:5**

**No. of Credits:4**

**Unit – 1**

Feudalism -Geographical Discoveries: Causes – Compass & Maps – Portugal Leads and Western World Follows – Consequences;(15 Hrs)

**Unit – II**

The Renaissance Movement: Factors for the Growth of Renaissance – Characteristic Features - Transformation from Medieval to Modern World; Reformation & Counter Reformation Movements: The Background – Protestantism – Spread of the Movement– Counter Reformation– Effects of Reformation(20Hrs)

**Unit - III**

Emergence of Nation States: Contributory Factors - England and other Nation States – Impact due to the Emergence of Nation States.; Age of Revolutions: The Glorious Revolution (1688) – Origin of Parliament – Constitutional Settlement – Bill of Rights – Results(15Hrs)

**Unit – IV**

Age of Revolutions: The American Revolution (1776) – Opening of New World – Causes – Course – Declaration of Independence, 1776 – Bill of Rights, 1791 – Significance(20Hrs).

**Unit – V**

Age of Revolutions: The French Revolution (1789) – Causes - Teachings of Philosophers - Course of the Revolution – Results(20Hrs)

**References:**

- 1 Burke, Peter, the Renaissance
- 2 C.J.H. Hayes, Modern Europe up to 1870
- 3 C.D. Hazen, Modern Europe up to 1945
- 4 Christopher Hill, From Reformation to Industrial Revolution
- 5 Elton, G.R., Reformation Europe, 1517-1559
- 6 Ferguson, the Renaissance
- 7 Gilmore, M.P., the World of Humanism, 1453-1517
- 8 Hilton, Rodney, Transition from Feudalism to Capitalism
- 9 J.H.Parry, the Age of Renaissance
- 10 J.N.L. Baker, History of Geographical Discoveries and Explorations
- 11 the New Cambridge Economic History of Europe, Vol. I, VII.

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**  
**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

(2021 – 2022)

**III BA.Semester – V (CBCS) Paper – V**

**Subject; History**

**Title of the Paper – Age of Rationalism and Humanism –The World Between 15<sup>th</sup>& 18<sup>th</sup> Centuries.**

Paper Code ; HIS-501C (w .e. f 2020 - 2021)  
Time : 3Hrs

Pass Marks: 28  
Max. Marks : 70

Model Question Paper

**SECTION – A**

Answer any TWO of the following

2x5=10 M

1. Geographical Discoveries
2. Counter Reformation
3. Boaston Tea Party
4. Reign of Terror

**SECTION – B**

Answer any FOUR of the following

4x15= 60 M

5. Analyse the features Feudalism
6. Explain the important features of Renaissance
7. What is Reformation Movement and its significance
8. Describe the causes for the emergence of Nation States
9. Give a brief account of Glorious Revolution
10. Discuss about the causes of American Revolution
11. Write an essay on causes for the French Revolution
12. Estimate the rule of Directory in France.



**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**  
**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

(2021 – 2022)

SUBJECT- History	HIS 501C	III B.A
------------------	----------	---------

TITLE: Age of Rationalism and Humanism –The World Between 15<sup>th</sup>& 18<sup>th</sup> Centuries.

Semester – V

Guidelines to the Paper Setter

Section	Unit – I	Unit – II	Unit – III	Unit - IV	Unit-V
A 5 Marks Questions	1	1	-	1	1
B 15 Marks Questions	1	2	2	1	2
Weightage	20	35	30	20	35

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU**  
**A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

(2021 – 2022)

**III BA. Semester – V (CBCS) Paper – VI**

**Subject:: History : Syllabus - Title of the Paper – History & Culture of Andhra Desa (from 12<sup>th</sup> to 19<sup>th</sup> Century A.D)**

**Paper Code : HIS-502C (w .e. f 2020 - 2021)**

**No.of Hours per week:5**

**No.of Credits:4**

**Unit – 1**

Andhra during 12th& 13th Centuries A.D.: Kakatiyas – Origin & its Antecedents – Administration – Social & Economic Life – Industries & Trade - Promotion of Literature and Culture – Architecture & Sculpture – Decline; The Age of Reddy Kingdoms: Patronage to Literature – Trade & Commerce.(20Hrs)

**Unit – II**

Andhra between 14th & 16th Centuries A.D.: Vijayanagara Empire: Polity, Administration, Society & Economy – Sri Krishna Devaraya and his contribution to Andhra Culture – Development of Literature & Architecture – Decline and Downfall.(15Hrs)

**Unit - III**

Andhra through 16th& 17th Centuries A.D.: Evolution of Composite Culture – The QutbShahis of Golkonda – Origin & Decline – Administration, Society & Economy –Literature & Architecture.(15Hrs)

**Unit – IV**

The 18th& 19th Centuries in Andhra: East India Company's Authority over Andhra – Three Carnatic Wars – Occupation of Northern Circars and Ceded Districts –Early Uprisings – Peasants and Tribal Revolts.(20Hrs)

**Unit – V**

The 18th& 19th Centuries in Andhra: Impact of Company Rule on Andhra – Administration – Land Revenue Settlements – Society – Education - Religion – Impact of Industrial Revolution on Economy – Peasantry & Famines – Contribution of Sir Thomas Munroe, C. P. Brown & Sir Arthur Cotton – Impact of 1857 Revolt in Andhra.(20Hrs)

**References:**

- 1 BalenduSekharam, *TheAndhras Through the Ages*
- 2 K. Sathyanarayana, *A Study of the History and Culture of Andhras*
- 3 Mallampalli Soma SekharaSarma, *History of the ReddiKindogms*
- 4 K. A.N.Sastry, *A History of South India*
- 5 H.K.Sherwani, *History of the KutubShahi Dynasty*
- 6 P.R.Rao, *History of Modern Andhra*
- 7 KhandavalliLakxmiranjanam&BalenduSekharam
- 8 SuravaramPratap Reddy
- 9 B.S.L.HanumantaRao
- 10 I.K.Sarma, *Early Historic Andhra Pradesh, 500 B.C.-624 A.D.*, New Delhi, 2008
- 11 B. Rajendra Prasad, *Early Medieval Andhra Pradesh, A.D.624 -1000 A.D.*, New Delhi, 2009
- 12 C. SomasundaraRao, *Medieval Andhra Pradesh, A.D. 1000 -1324 A.D.*, New Delhi, 2011
- 13 R. Soma Reddy, *Late Medieval Andhra Pradesh, A.D. 1324-1724 A.D.*, New Delhi, 2014

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU,A.P- 521165**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

**III BA. Semester – V (CBCS) Paper – VI**

**Subject:: History**

**Title of the Paper – History & Culture of Andhra Desa (from 12<sup>th</sup> to 19<sup>th</sup> Century A.D)**

**Paper Code; HIS-502C (w .e. f 2020 - 2021)**

**Pass Marks: 28**

**Time : 3Hrs**

**Max. Marks: 70**

Model Question Paper

**SECTION – A**

Answer any TWO of the following 2x5=10

1. Rudrama Devi
2. Battle of Tallikota
3. Abdul Hasan Tanisha
4. Sir Arthur Cotton

**SECTION – B**

Answer any FOUR of the following 4x15=60

5. Write an essay on Socio-Economic and Cultural conditions of Kakatiyas
6. Discuss the glory of Vijayanagara Empire
7. Briefly explain the Administrative system of Qutub Shahis
8. Write about the general conditions of Andhra in 17<sup>th</sup> Century
9. Give a brief account of Carnatic Wars in Deccan
10. Explain about the Acquisition of Northern Circars by British
11. Describe the greatness of Thomas Munroe
12. Estimate the impact of 1857 Revolt in Andhra.

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU  
A.P- 521165**

**(2021 – 2022)**

(An autonomous college in the jurisdiction of Krishna university, Machilipatnam)

SUBJECT- History	HIS 502C	III B.A
------------------	----------	---------

TITLE: History & Culture of Andhra Desa (from 12<sup>th</sup> to 19<sup>th</sup> Century A.D)

Semester – V

Guidelines to the Paper Setter

Section	Unit – I	Unit – II	Unit – III	Unit - IV	Unit-V
A 5 Marks Questions	1	1	1	-	1
B 15 Marks Questions	1	1	2	2	2
Weightage	20	20	35	30	35

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF MATHEMATICS**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**10-11-2021**

Minutes of the meeting of BOS in Mathematics for B.Sc Degree Courses of  
AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru, held at 2.30  
PM on 10 – 11 – 2021.

*N.V. Srinivasa Rao*

*Presiding*

Members Present:

- |   |                       |   |
|---|-----------------------|---|
| 1) <u><i>N.V. Srinivasa Rao</i></u><br>(N.V. Srinivasa Rao)         | Chairman              | Head, Department of<br>Mathematics,<br>AG & SG S Degree College.      |
| 2) <u><i>J. Jaya Lakshmi</i></u><br>(Dr. K. Jaya Lakshmi)           | University<br>Nominee | Department of Mathematics,<br>Krishna University,<br>Machilipatnam.   |
| 3) <u><i>M. Venkateswara Rao</i></u><br>(M. Venkateswara Rao)       | Subject<br>Expert     | Department of Mathematics,<br>Govt. Degree College,<br>Avanigadda.    |
| 4) <u><i>I. V. Venkateswara Rao</i></u><br>(I. V. Venkateswara Rao) | Subject<br>Expert     | Department of Mathematics,<br>P. B. Siddhartha College,<br>Vijayawada |
| 5) <u><i>D. Sunitha</i></u><br>(D. Sunitha)                         | Member                | Lecturer in Mathematics<br>AG & SG S Degree College.                  |
| 6) <u><i>A. Bhargavi</i></u><br>(A. Bhargavi)                       | Member                | Lecturer in Mathematics<br>AG & SG S Degree College.                  |
| 7) <u><i>Noor Mohammad</i></u><br>(Noor Mohammad)                   | Member                | Lecturer in Mathematics<br>AG & SG S Degree College.                  |
| 8) <u><i>K. Rajya Lakshmi</i></u><br>(K. Rajya Lakshmi)             | Member                | Lecturer in Mathematics<br>AG & SG S Degree College.                  |
| 9) <u><i>B. Durga Praveen</i></u><br>(B. Durga Praveen)             | Student<br>Member     | III B.Sc M.C.Cs<br>AG & SG S Degree College.                          |
| 10) <u><i>M. Rose Manasa</i></u><br>(M. Rose Manasa)                | Student<br>Member     | III B.Sc M.P.C (E)<br>AG & SG S Degree College.                       |

### Agenda of B.O.S Meeting:

1. To discuss and recommend the Syllabi, Model Question Papers and Guidelines to be followed by question paper setters in Mathematics for 1<sup>st</sup> Semester as per the guidelines and instructions under CBCS prescribed by Krishna University from the Academic Year 2021-22.
2. To discuss and recommend the Syllabi, Model Question Papers and Guidelines to be followed by question paper setters in Mathematics and Analytical Skills for 3<sup>rd</sup> Semester as per the guidelines and instructions under CBCS prescribed by Krishna University from the Academic Year 2021-22.
3. To discuss and recommend the Syllabi, Model Question Papers and Guidelines to be followed by question paper setters in Mathematics for 5<sup>th</sup> Semester as per the guidelines and instructions under CBCS prescribed by Krishna University from the Academic Year 2021-22.
4. Any other matter.

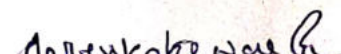
### Resolutions.

1. Discussed and recommended that changes are required in Syllabi, Model Question Papers and Guidelines to be followed by the question paper setters in Mathematics for 1<sup>st</sup> Semesters from the Academic year 2021-22. The maximum marks for IA is 25 and SE is 75. Each IA written examination is of 1 Hr. 30 min duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks. 5 marks will be allotted basing on Assignment. There is no minimum passing for IA and there is no provision for improvement in IA. Even though the candidate is absent for two IA exams/obtain zero marks the external marks are considered (if he/ she gets 40 out of 75) and the result shall be declared as 'PASS' from the Academic year 2021-22.
2. Discussed and recommended that changes are required in Syllabi, Model Question Papers and Guidelines to be followed by the question paper setters in Mathematics and Analytical Skills for all degree programs of 3<sup>rd</sup> Semesters from the Academic year 2021-22. The maximum marks for IA is 30 and SE is 70. Each IA written examination is of 1 Hr. 30 min duration for 20 marks. The tests will be conducted centrally. The average of two such IA is calculated for 20 marks. 5 marks will be allotted basing on Assignment and 5 marks are allotted for attendance. There is no minimum passing for IA and there is no provision for improvement in IA. Even though the candidate is absent for two IA exams/obtain zero marks the external marks are considered (if he/ she gets 40 out of 70) and the result shall be declared as 'PASS' from the Academic year 2021-22. There is no IA for Analytical Skills and minimum pass marks is 20 out of 50 in SE.
3. Discussed and recommended that no changes are required in syllabi, Model Question Papers and Guidelines for question paper setters in Mathematics for the 5<sup>th</sup> Semester for the Academic year 2021-22.
4. Discussed and recommended for organizing seminars, Guest lecturers, Online Examinations and Workshops to upgrade the knowledge of students for Competitive Examinations for the approval of the Academic Council.

V. Srinivasan  
Chairman

  
University Nominee

  
Subject Expert

  
Subject Expert

**A . G & S . G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**

(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)  
 NAAC reaccredited at 'A' level and *ISO 9001 – 2015 Certified*

**Department of Mathematics****COURSE STRUCTURE****Paper Title :- DIFFERENTIAL EQUATIONS****Semester : I**

Course Code	MATT11A	Course Delivery Method	Class Room / Blended Mode - Both
Credits	5	CIA Marks	30
No. of Lecture Hours / Week	6	Semester End Exam Marks	70
Total Number of Lecture Hours	90	Total Marks	100
Year of Introduction : 2018-19	Year of Offering: 2022 - 23	Year of Revision: ----	Percentage of Revision: 0%

**Programme Outcomes**

S. No	P.O
	At the end of the Programme the student will be able to:
1	Demonstrate the ability to use mathematical skills such as formulating and tackling mathematics related problems and identifying and applying approximate physical principles and methodologies to solve a wide range of problems associated with mathematics.
2	Apply the underlying unifying structures of mathematics and the relationships among them.
3	Investigate and apply mathematical problems and solutions in variety of contexts related to science and technology, business and industry.

**Course Outcomes of MATT11A**

S. No	C.O	Mapping
	Upon successful completion of this course, students should have the knowledge and skills to:	
1	Determine the solution of differential equations of the first order and of the first degree by Exact, Linear and Bernoulli's method.	L2, PO – 1
2	Understand the basic concepts of first order differential equations to find Orthogonal trajectories.	L2, PO - 1
3	Determine the solution of differential equations of the first order and of a degree higher than first by using methods of solvable for P, X, and Y.	L2, PO - 1
4	Compute all solutions of second and higher order linear differential equations with constant coefficients, linear equations with variable coefficients.	L3, PO – 1
5	Calculate the solutions of higher order differential equations by Cauchy Euler and Variation of parameters.	L2, PO – 1



**A . G & S . G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**

(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

<b>MATHEMATICS</b>	<b>MAT T11A</b>	<b>2021 – 22 onwards</b>	<b>B.Sc (MPC, MPCs, MCCS, MSCS)</b>
--------------------	-----------------	--------------------------	-------------------------------------

**DIFFERENTIAL EQUATIONS**

**SEMESTER-I**

**No of Credits: 5**

**OBJECTIVES:**

1. Understand all of the concepts relating to the order and linearity of ODEs, analytic and computational solution methods for ODEs, and the real-world applications of ODEs.
2. Apply your understanding of the concepts, formulas, and problem-solving procedures to thoroughly investigate relevant physical models.
3. Explain the concepts of linear systems, ODE solution methods, and related ideas at a fundamental level, as well as how and why we use the solution techniques that we use.

**UNIT-I: DIFFERENTIAL EQUATIONS OF FIRST ORDER& FIRST DEGREE (12Hrs)**

- 1.1 Linear Differential Equations
- 1.2 Differential Equations Reducible to Linear Form, Bernoulli's differential equations.
- 1.3 Exact Differential Equations
- 1.4 Integrating Factors,  $1/Mx+Ny$ ,  $1/Mx-Ny$ ,  $e^{\int f(x)} dx$ ,  $e^{\int g(y)} dy$ , and Inspection method
- 1.5 Change of Variables

**UNIT-II: ORTHOGONAL TRAJECTORIES &DIFFERENTIAL EQUATIONS OF FIRST ORDER BUT NOT FIRST DEGREE (12Hrs)**

- 2.1 Orthogonal Trajectories
- 2.2 Self-Orthogonal Trajectories
- 2.3 Equations solvable for p
- 2.4 Equations solvable for y
- 2.5 Equations solvable for x
- 2.6 Equations Homogeneous in X & Y
- 2.7 Equations that do not contain x (or y)
- 2.8 Clairaut's Equation and Equations reducible to Clairaut's form.

**UNIT – III: Higher order linear differential equations-I (12Hrs)**

- 3.1 Solution of homogeneous linear differential equations of order n with constant coefficients
- 3.2 Solution of the non-homogeneous linear differential equations with constant coefficients by means of polynomial operators.
- 3.3 General Solution of  $f(D)y=0$
- 3.4 General Solution of  $f(D)y=Q$  when Q is a function of x.
- 3.5  $1/f(D)$  is Expressed as partial fractions.
- 3.6 P.I. of  $f(D) y = Q$  when  $Q= be^{ax}$
- 3.7 P.I. of  $f(D) y = Q$  when Q is  $b \sin ax$  or  $b \cos ax$ .

**UNIT – IV: Higher order linear differential equations-II (12Hrs)**

- 4.1 Solution of the non-homogeneous linear differential equations with constant coefficients.
- 4.2 P.I. of  $f(D) y = Q$  when  $Q= bx^k$
- 4.3 P.I. of  $f(D) y = Q$  when  $Q= e^{ax}V$
- 4.4 P.I. of  $f(D) y = Q$  when  $Q= xV$
- 4.5 P.I. of  $f(D) y = Q$  when  $Q= x^mV$  where  $v = \sin bx$  and  $\cos bx$

**UNIT-V: Higher order Differential Equations –III (12Hrs)**

- 5.1 The Cauchy-Euler Equation.
- 5.2 Linear differential Equations with non-constant coefficients
- 5.3 Method of Variation of parameters.

## Student Activities:

- 1) **Class-room activities:** Power point presentations, Assignments
- 2) **Library activities:** Visit to library and preparation of notes for Assignment problems.
- 3) **Activities in the Seminars, workshops and conferences:** Participation/presentation in seminar/workshop/conference.

## CO-CURRICULAR ACTIVITIES:

- Quiz Competitions, Seminars
- Group Discussions

## WEB LINKS:

[https://en.wikipedia.org/wiki/Differential\\_equation](https://en.wikipedia.org/wiki/Differential_equation)

<https://tutorial.math.lamar.edu/classes/de/de.aspx>

<https://www.mathsisfun.com/calculus/differential-equations.html>

<b>Prescribed Text book:</b>				
S.NO	AUTHOR	TITLE OF THE BOOK	PUBLISHER	YEAR OF PUBLICATION
1	V. Krishna Murthy	A text book of Mathematics for B.A/B.ScVol – I	S-Chand&co	2015

<b>Reference books:</b>				
S.NO	AUTHOR	TITLE OF THE BOOK	PUBLISHER	YEAR OF PUBLICATION
1	Dr.A. Anjaneyulu	A text book of mathematics for B.A/B.ScVol – I	Deepthi Publications	2015
2	Rai Singhania	Ordinary& Partial Differential Equations	S-Chand	2009
3	Zafar Ahsan	Differential Equations and their applications	Prentice-Hall of India Pvt Ltd, McGraw Hill	2000

Recommended Question Paper Pattern and Model BLUE PRINT FOR QUESTION PAPER  
PATTERN COURSE-I, DIFFERENTIAL EQUATIONS

<b>Unit</b>	<b>TOPIC</b>	<b>S.A.Q(including choice)</b>	<b>E.Q(including choice)</b>	<b>Total Marks</b>
<b>I</b>	Differential Equations of 1 <sup>st</sup> order and 1 <sup>st</sup> degree	2	2	28
<b>II</b>	Orthogonal Trajectories, Differential Equations of 1 <sup>st</sup> order but not of 1 <sup>st</sup> degree	2	2	28
<b>III</b>	Higher Order Linear Differential Equations (with constant coefficients) – I	2	2	28
<b>IV</b>	Higher Order Linear Differential Equations (with constant coefficients) – II	2	2	28
<b>V</b>	Higher Order Linear Differential Equations (with non-constant coefficients)	2	2	28
<b>TOTAL</b>		10	10	140

**S.A.Q.** = Short answer questions (4 marks)

**E.Q.** = Essay questions (10 marks)

Total Marks = 70 M

.....

**COURSE-I, DIFFERENTIAL EQUATIONS**

**B.Sc MATHEMATICS MODEL PAPER (W.E.F 2022 – 2023)**

Time: 3Hrs

Max.Marks:70M

Answer the following questions.

5 x 14 = 70M

1. (a) i) ----- 10 M  
ii) ----- 4M  
(OR)

(b) i) ----- 10M  
ii) ----- 4 M

2. (a) i) ----- 10 M  
ii) ----- 4M  
(OR)

(b) i) ----- 10M  
ii) ----- 4 M

3. (a) i) ----- 10 M  
ii) ----- 4M  
(OR)

(b) i) ----- 10M  
ii) ----- 4 M

4. (a) i) ----- 10 M  
ii) ----- 4M  
(OR)

(b) i) ----- 10M  
ii) ----- 4 M

5. (a) i) ----- 10 M  
ii) ----- 4M  
(OR)

(b) i) ----- 10M  
ii) ----- 4 M

\*\*\*\*\*

**A. G & S. G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**

(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

NAAC recredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: ABSTRACT ALGEBRA**

**Semester: III**

Course Code	<b>MAT - 301</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	5	CIA Marks	30
No. of Lecture Hours / Week	6	Semester End Exam Marks	70
Total Number of Lecture Hours	75	Total Marks	100
Year of Introduction :2021-22	Year of Offering: 2021 - 22	Year of Revision: ---- 2021-22	Percentage of Revision: 0%

**Course Outcomes:**

After successful completion of this course, the student will be able to;

1. Acquire the basic knowledge and structure of groups, subgroups and cyclic groups.
2. Get the significance of the notation of a normal subgroups.
3. Get the behavior of permutations and operations on them.
4. Study the homomorphisms and isomorphisms with applications.
5. Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems.
6. Understand the applications of ring theory in various fields.

**Course Syllabus:**

**UNIT – I: GROUPS:**

**(12 Hours)**

Binary Operation – Algebraic structure – semi group- monoid – Group definition and elementary properties

Finite and Infinite groups – examples – order of a group, Composition tables with examples.

**UNIT – II: SUB - GROUPS:**

**(12 Hours)**

Complex Definition – Multiplication of two complexes Inverse of a complex-Subgroup definition- examples- criterion for a complex to be a subgroups. Criterion for the product of two subgroups to be a subgroup-union and Intersection of subgroups.

**Co-sets and Lagrange's Theorem :**

Cosets Definition – properties of Cosets–Index of a subgroups of a finite groups–Lagrange's Theorem.

**UNIT –III: NORMAL SUBGROUPS :**

**(12 Hours)**

Definition of normal subgroup – proper and improper normal subgroup–Hamilton group – criterion for a subgroup to be a normal subgroup – intersection of two normal subgroups – Sub group of index 2 is a normal sub group –quotient group – criteria for the existence of a quotient group.

**HOMOMORPHISM :**

Definition of homomorphism – Image of homomorphism elementary properties of homomorphism – Isomorphism – automorphism definitions and elementary properties–kernel of a homomorphism – fundamental theorem on Homomorphism and applications.

**UNIT – IV: PERMUTATIONS AND CYCLIC GROUPS : (12 Hours)**

Definition of permutation – permutation multiplication – Inverse of a permutation – cyclic permutations – transposition – even and odd permutations – Cayley’s theorem.

**Cyclic Groups :-** Definition of cyclic group – elementary properties – classification of cyclic groups.

**UNIT – V: RINGS : (12 Hours)**

Definition of Ring and basic properties, Boolean Rings, divisors of zero and cancellation laws Rings, Integral Domains, Division Ring and Fields, The characteristic of a ring - The characteristic of an Integral Domain, The characteristic of a Field. Sub rings and Ideals ( only definitions )

**Co-Curricular Activities (15 Hours)**

Seminar/ Quiz/ Assignments/ Group theory and its applications / Problem Solving.

**Text Book:**

A text book of Mathematics for B.A. / B.Sc. by B.V.S.S. SARMA and others, published by S.Chand & Company, New Delhi.

**Reference Books:**

1. Abstract Algebra by J.B. Fraleigh, Published by Narosa publishing house.
2. Modern Algebra by M.L. Khanna.
3. Rings and Linear Algebra by Pundir & Pundir, published by Pragathi Prakashan.

**A . G & S . G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**

(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

**SEMESTER - III, ABSTRACT ALGEBRA**

**B.Sc MATHEMATICS MODEL PAPER**

**Time: 3Hrs**

**Max.Marks:70M**

**SECTION - A**

Answer any **FOUR** questions. Each question carries **FIVE** marks.

Choosing at least **ONE** question from each part.

**4 X 5 M=20 M.**

**Part – 1**

1. Show that the set  $G = \{x/ x = 2^a, 3^b \text{ and } a, b \in \mathbb{Z}\}$  is a group under multiplication.
2. Define order of an element of a Group. In a group  $G$  if  $a \in G$  then  $O(a) = O(a^{-1})$ .
3. If  $H$  and  $K$  are two subgroups of a group  $G$ , then prove that  $HK$  is a subgroup of  $G$  if and only if  $HK=KH$
4. If  $G$  is a group and  $H$  is a subgroup of index 2 in  $G$  then prove that  $H$  is a normal subgroup.

**Part – 2**

5. The necessary and sufficient condition for a homomorphism  $f$  of a group  $G$  on to a group  $G^1$  with kernel  $K$  to be an isomorphism of  $G$  into  $G^1$  is that  $K = \{e\}$
6. Examine whether the following permutations are even or odd  
i)  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 6 & 1 & 4 & 3 & 2 & 5 & 7 & 8 & 9 \end{pmatrix}$     ii)  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 \\ 3 & 2 & 4 & 5 & 6 & 7 & 1 \end{pmatrix}$
7. Prove that a group of prime order is cyclic.
8. Every field is an integral domain.

**SECTION - B**

Answer any **FIVE** questions. Each question carries **TEN** marks.

Choosing at least **TWO** question from each part

**5 X 10 M = 50 M**

**Part – 1**

9. Show that the set  $Q_+$  of all +ve rational numbers forms an abelian group under the composition defined by “ $\circ$ ” such that  $a \circ b = ab/3$  for  $a, b \in Q_+$
10. Show that the set of  $n^{\text{th}}$  roots of unity forms an abelian group under multiplication.
11. The Union of two subgroups is also a subgroup  $\Leftrightarrow$  one is contained in the other.
12. State and prove Lagrange’s theorem.

**Part – 2**

13. Prove that a subgroup  $H$  of a group  $G$  is a normal subgroup of  $G$  iff the product of two right coset of  $H$  in  $G$  is again a right coset of  $H$  in  $G$ .
14. State and prove fundamental theorem of homomorphisms of groups.
15. Prove that every subgroup of cyclic group is cyclic.
16. Prove that the characteristic of an integral domain is either prime or zero.

**BLUE PRINT FOR QUESTION PAPER PATTERN COURSE-III, ABSTRACT ALGEBRA**

<b>Unit</b>	<b>TOPIC</b>	<b>S.A.Q (including choice)</b>	<b>E.Q (including choice)</b>	<b>Total Marks</b>
I	Groups	2	2	30
II	Subgroups, Cosets & Lagrange's theorem	1	2	25
III	Normal Subgroups and Homomorphism	2	2	30
IV	Permutations and Cyclic groups	2	1	20
V	Rings	1	1	15
<b>Total</b>		<b>8</b>	<b>8</b>	<b>120</b>

**S.A.Q.** = Short answer questions (5 marks)

**E.Q.** = Essay questions (10 marks)

Short answer questions : 4 X 5 M = 20 M

Essay questions : 5 X 10 M = 50 M

.....  
Total Marks = 70 M



**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,  
VUYYURU-521165, KRISHNA Dt, A.P.**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)  
Accredited with “A” Grade by NAAC, Bengaluru

**Title of the Paper: Analytical Skills**

**Semester: III**

Course Code	<b>ANS - 301</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	2	CIA Marks	0
No. of Lecture Hours / Week	2	Semester End Exam Marks	50
Total Number of Lecture Hours	30	Total Marks	50
Year of Introduction :2021-22	Year of Offering: 2021 - 22	Year of Revision: ----	Percentage of Revision: 0%

**Course Objective:** Intended to inculcate quantitative analytical skills and reasoning as an inherent ability in students.

**Course Outcomes:**

After successful completion of this course, the student will be able to;

- 1) Understand the basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated Skills.
- 2) Acquire competency in the use of verbal reasoning.
- 3) Apply the skills and competencies acquired in the related areas
- 4) Solve problems pertaining to quantitative ability, logical reasoning and verbal ability inside and outside the campus.

**UNIT – 1**

**6 Hrs**

**Test of Reasoning – I:-**Coding – Decoding, Direction Test, Interchange of Signs, Logical Venn diagrams, Series Puzzles.

**UNIT – 2**

**6 Hrs**

**Test of Reasoning – II:-** Analogies of numbers and Alphabets completion of blank spaces following the pattern in A: B: C: D relationship odd thing out; Missing number in a sequence or a series.

**UNIT – 3**

**6 Hrs**

**Arithmetic ability:-**Algebraic operations BODMAS, Fractions, Divisibility rules, LCM and GCD (HCF).

**Date, Time and Arrangement Problems:** Calendar Problems, Clock Problems, Blood Relationship.

**UNIT – 4**

**6 Hrs**

**Quantitative aptitude:** - Averages, Ration and proportion, Problems on ages, Time-distance-speed.

**UNIT – 5**

**6 Hrs**

**Business computations:-** Percentages, Profit & loss, Partnership, simple, compound interest.

**Reference Books:**

1. Quantitative Aptitude for Competitive Examination by R S Agrawal, S.Chand publications.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude: Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogitaprakasan, Kic X, Kiran Prakasan publishers
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill Publications.
5. Old question Paper of the exams conducted by (Wipro, TCS, Infosys, Etc) at their recruitment process, source-Internet.

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE  
VUYYURU-521165**

(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)  
**Accredited with “A” Grade by NAAC, Bengaluru**

**DEPARTMENT OF MATHEMATICS**

**Analytical Skills**

**Time: 2 Hrs**

**Code: ANS – 301**

**Max. Marks: 50**

**Min. Marks: 20**

---

**Guidelines for Paper setter**

To be set all the questions are “Multiple Choice” with four (or) five options.

**Section – A**

**Unit – 1:-** Ten questions. Each question carries **ONE** mark 10x1=10M

**Unit – 2:-** Ten questions. Each question carries **ONE** mark 10x1=10M

**Section – B**

**Unit – 3:-** Five questions. Each question carries **TWO** mark 5x2=10M

**Unit – 4:-** Five questions. Each question carries **TWO** mark 5x2=10M

**Unit – 5:-** Five questions. Each question carries **TWO** mark 5x2=10M

\*\*\*\*\*

**A.G &S.G SIDDHARTHA DEGREE COLLEGE, VUYYURU-521165**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

---

**MATHEMATICS    MAT-501C    2021-22    III B.Sc (MPC, MPCs, MCCs)**

---

**SEMESTER-V**

**PAPER-V**

**Max.Marks:70**

**Hours/ Week: 5**

**No. of Credits: 5**

**VECTOR CALCULUS & RING THEORY**

**UNIT – 1: VECTOR DIFFERENTIATION: - (12 hrs)**

Vector Differentiation, Ordinary derivatives of vectors, Differentiability, Gradient, divergence, Curl operators, Formulae Involving these operators.

**UNIT – 2: VECTOR INTEGRATION: - (12 hrs)**

Line Integral, Surface Integral and Volume integral with examples.

**UNIT – 3: VECTOR INTEGRATION APPLICATIONS: - (12 hrs)**

Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems.

**UNIT – 4: RINGS-I: - (12 hrs)**

Definition of Ring and basic properties, Boolean Rings, divisors of zero and cancellation laws Rings, Integral Domains, Division Ring and Fields, The characteristic of a ring – The characteristic of an Integral Domain, The characteristic of a Field. Sub Rings, Ideals

**UNIT – 5: RINGS-II: - (12 hrs)**

Definition of Homomorphism – Homomorphic Image – Elementary Properties of Homomorphism – Kernel of a Homomorphism – Fundamental theorem of Homomorphism  
Maximal Ideals – Prime Ideals.

**Reference Books:-**

1. Abstract Algebra by J. Fraleigh, Published by Narosa Publishing house.
2. Vector Calculus by Santhi Narayana, Published by S. Chand & Company Pvt. Ltd., New Delhi.
3. A text Book of B.Sc., Mathematics by B.V.S.S.Sarma and others, published by S. Chand & Company Pvt. Ltd., New Delhi.
4. Vector Calculus by R. Gupta, Published by Laxmi Publications.
5. Vector Calculus by P.C. Matthews, Published by Springer Verlag publications.
6. Rings and Linear Algebra by Pundir & Pundir, Published by Pragathi Prakashan.

**Suggested Activities:**

Seminar/ Quiz/ Assignments/ Project on Ring theory and its applications

Chairman

University Nominee

Subject Expert

Subject Expert

**A.G & S.G SIDDHARTHA DEGREE COLLEGE: VUYYURU**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

**DEPARTMENT OF MATHEMATICS**

**Question Paper Guidelines for SEMESTER-END Examinations**

**Time: 3 Hrs                      MAT- 501 C                      Max.Marks:70                      Min. Mark: 28**

Note :- 1) Answer any FOUR questions out of 8 in Section-A. Each question Carries 5 marks.  
(4x5=20 Marks)

2) Answer any FIVE questions out of 8 in Section-B. Each question Carries 10 marks.  
(5x10=50 Marks)

**Questions to be set as follows:**

Questions to be set as follows:

	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5
<u>Section-A</u> (Short Answer Questions)	2	2	1	2	1
<u>Section-B</u> (Essay Questions)	2	1	2	2	1

Chairman

University Nominee

Subject Expert

Subject Expert

-The End -

**EXAMINATION AT THE END OF FIFTH SEMESTER ( w.e.f 2020-21)**

---

**MATHEMATICS      Paper VI      MAT- 502C      MAX.MARKS: 70      TIME: 3 hrs**

---

**LINEAR ALGEBRA**

**Section – A (short answer questions)**

**Answer any Four of the following questions.**

**4x5 = 20M**

**Choosing at least ONE question from each Part.**

**Part - I**

1) Show that the rank of the transpose of a matrix is equal to the rank of the original matrix. i.e.,  $\rho(A) = \rho(A^T)$ .

2) Find the rank of the matrix  $\begin{bmatrix} 1 & -2 & 2 & -3 \\ 4 & 1 & 0 & 2 \\ 0 & 3 & 0 & 4 \\ 0 & 1 & 0 & 2 \end{bmatrix}$  by reducing it in the Normal form

3) If S is a subset of a vector space V(F), then prove that S is a subspace of V  $\Leftrightarrow L(S) = S$

4) Let  $w_1$  and  $w_2$  be two subspaces of  $R^4$  given by  $w_1 = \{(a,b,c,d) ; b-2c+d=0\}$ ,  
 $w_2 = \{(a,b,c,d); a=d, b=2c\}$ . Find the basis and dimension (i)  $w_1$  (ii)  $w_2$  (iii)  $w_1 \cap w_2$   
and hence find the  $dim(w_1 + w_2)$

**Part - II**

5) Let  $T: R^2 \rightarrow R^2$  be a linear transformation defined by  $T(1,0)=(1,1), T(0,1)=(-1,2)$  then find a linear transformation T

6) The mapping  $T: V_3(R) \rightarrow V_2(R)$  is defined by  $T(x, y, z) = (x - y, x - z)$  is a linear transformation.

- 7) State and prove Cauchy – Schwarz’s inequality
- 8) State and prove Triangle inequality

**Section – B (long answer questions)**

Answer any **FIVE** of the following questions.

**5x10 = 50M**

**Choosing at least TWO questions from each Part.**

**Part - I**

- 9) State and prove Cayley – Hamilton theorem in Matrices.
- 10) Find the characteristic roots and the corresponding characteristic vectors of the matrix

$$A = \begin{bmatrix} 1 & 4 \\ 3 & 2 \end{bmatrix}$$

- 11) Let  $V(F)$  be a vector space. A non-empty set  $W \subseteq V$ . The necessary and sufficient condition for  $W$  to be a subspace of  $V$  is  $a, b \in F$  and  $\alpha, \beta \in V \Rightarrow a\alpha + b\beta \in W$
- 12) Let  $W$  be a subspace of a finite dimensional vector space  $V(F)$  then  

$$\dim V/W = \dim V - \dim W.$$

**Part - II**

- 13) Find the linear Transformation  $T(x, y, z)$  where  $T : R^3 \rightarrow R$  is defined by  
 $T(1, 1, 1) = 3, T(0, 1, -2) = 1$  and  $T(0, 0, 1) = -2.$
- 14) State and prove Rank-nullity theorem
- 15) State and prove Bessel’s inequality
- 16) If  $(1, 0, 1, 1) (-1, 0, -1, 1) (0, -1, 1, 1)$  forms a basis of a subspace of  $R^4(R)$  use Gram-Schmidt process to obtain an orthonormal basis.

Chairman

University Nominee

Subject Expert

Subject Expert

\*\*\*\*\*

# A.G & S.G SIDDHARTHA DEGREE COLLEGE: VUYYURU-521165

(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

---

**MATHEMATICS MAT-502C 2021-22 III B.Sc (MPC, MPCs, MCCs)**

---

**SEMESTER-V**

**PAPER-VI**

**Max.Marks:70**

**Hours/ Week: 5**

**No. of Credits: 5**

## **LINEAR ALGEBRA**

### **UNIT –I Matrix:**

**(12 hrs)**

Matrices, Elementary Properties of Matrices, Triangular form, Echelon form, Normal form Inverse Matrices, Non – Singular form, Rank of Matrix, Linear Equations, Characteristic Roots, Characteristic Vectors of square Matrix, Cayley – Hamilton Theorem.

### **UNIT – II Vector Spaces-I:**

**(12 hrs)**

Vector Spaces, General properties of vector spaces, n-dimensional Vectors, addition and scalar multiplication of Vectors, internal and external composition, Null space, Vector subspaces, Algebra of subspaces, Linear Sum of two subspaces, linear combination of Vectors, Linear span Linear independence and Linear dependence of Vectors.

### **UNIT –III Vector Spaces-II:**

**(12 hrs)**

Basis of Vector space, Finite dimensional Vector spaces, basis extension, co-ordinates, Dimension of a Vector space, Dimension of a subspace, Quotient space and Dimension of Quotient space.

### **UNIT –IV Linear Transformations:**

**(12 hrs)**

Linear transformations, linear operators, Properties of L.T, sum and product of LTs, Algebra of Linear Operators, Range and null space of linear transformation, Rank and Nullity of linear transformations – Rank – Nullity Theorem.

### **UNIT –V Inner product space:**

**(12 hrs)**

Inner product spaces, Euclidean and unitary spaces, Norm or length of a Vector, Schwartz inequality, Triangle in Inequality, Parallelogram law, Orthogonality, Orthonormal set, complete orthonormal set, Gram – Schmidt orthogonalisation process. Bessel’s inequality and Parseval’s Identity.

### **Reference Books:**

1. Linear Algebra by J.N. Sharma and A.R. Vasista, published by Krishna Prakashan Mandir, Meerut- 250002.
2. Matrices by Shanti Narayana, published by S.Chand Publications.
3. Linear Algebra by Kenneth Hoffman and Ray Kunze, published by Pearson Education (low priced edition), New Delhi.
4. Linear Algebra by Stephen H. Friedberg et al published by Prentice Hall of India Pvt. Ltd. 4th Edition 2007.

### **Suggested Activities:**

Seminar/ Quiz/ Assignments/ Project on “Applications of Linear algebra Through Computer Sciences”

Chairman

University Nominee

Subject Expert

Subject Expert

**A.G & S.G SIDDHARTHA DEGREE COLLEGE: VUYYURU**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

**DEPARTMENT OF MATHEMATICS**

**Question Paper Guidelines for SEMESTER-END Examinations**

**Time: 3 Hrs      MAT- 502 C      Max.Marks:70      Min. Mark: 28**

---

Note :- 1) Answer any FOUR questions out of 8 in Section-A. Each question Carries 5 marks. (4x5=20 Marks)

2) Answer any FIVE questions out of 8 in Section-B. Each question Carries 10 marks. (5x10=50 Marks)

**Questions to be set as follows:**

Questions to be set as follows:

	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5
<u>Section-A</u> (Short Answer Questions)	2	1	1	2	2
<u>Section-B</u> (Essay Questions)	2	1	1	2	2

Chairman

University Nominee

Subject Expert

Subject Expert

-The End -



**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,  
VUYYURU – 521165, KRISHNA Dt., A.P.  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)  
EXAMINATION AT THE END OF FIFTH SEMESTER (w.e.f 2020-21)**

**MATHEMATICS    Paper V    MAT- 501C    MAX.MARKS: 70    TIME: 3 hrs**

**(VECTOR CALCULUS AND RING THEORY)**

**Section – A (short answer questions)**

Answer any **Four** of the following questions.

**4x5 = 20M**

Choosing at least **ONE** question from each Part.

**Part - I**

- 1) If  $r = a \cos t i + a \sin t j + at \tan \theta k$  find  $\left| \frac{dr}{dt} \times \frac{d^2r}{dt^2} \right|$  and  $\left[ \frac{dr}{dt} \frac{d^2r}{dt^2} \frac{d^3r}{dt^3} \right]$
- 2) Find  $\text{div } f$  and  $\text{curl } f$  where  $f = \text{grad}(x^3 + y^3 + z^3 - 3xyz)$ .
- 3) If  $F = 3xyi - y^2j$  evaluate  $\oint_c F \cdot dr$  where 'c' is the curve  $y = 2x^2$  in the xy plane from (0, 0) to (1, 2).
- 4) If  $F = 2xzi - xj + y^2k$  evaluate the  $\int_v F \cdot dv$  where v is the region bounded by the surface  $x = 0, x = 2, y = 0, y = 6, z = x^2, z = 4$ .

**Part - II**

- 5) State and prove Green's theorem in a plane.
- 6) Prove that  $Z_m = \{0, 1, 2, 3, \dots, m-1\}$  is a ring with respect to addition and multiplication modulo 'm'
- 7) Prove that a field has no Zero divisors.
- 8) If f is homomorphism of a ring R into a ring  $R^1$  then  $\text{ker } f$  is an ideal of R

Chairman

University Nominee

Subject Expert

Subject Expert

**Section – B (long answer questions)**

Answer any **FIVE** of the following questions.

**5x10 = 50M**

**Choosing at least TWO questions from each Part.**

**Part - I**

- 9) Prove that  $\text{grad}(A \cdot B) = (B \cdot \nabla)A + (A \cdot \nabla)B + B \times \text{curl} A + A \times \text{curl} B$ .
- 10) Evaluate  $\int_s F \cdot N ds$  where  $F = zi + xj - 3y^2zk$  and  $s$  is the surface  $x^2 + y^2 = 16$  included in the first octant between  $z=0$  and  $z=5$ .
- 11) State and prove Gauss divergence Theorem.
- 12) Verify Green's Theorem in the plane for  $\oint_c (3x^2 - 8y^2)dx + (4y - 6xy)dy$  where  $c$  is the region bounded by  $y = \sqrt{x}$  and  $y = x^2$ .

**Part - II**

- 13) Find the directional derivative of the function  $f = x^2 - y^2 + 2z^2$  at the point  $P(1, 2, 3)$  in the direction of the line  $PQ$  where  $Q = (5, 0, 4)$ .
- 14) Define Field. Prove that every field is an integral domain.
- 15) Prove that  $Q(\sqrt{2}) = \{a + b\sqrt{2} / a, b \in Q\}$  is a ring with respect to ordinary addition and multiplication.
- 16) State and prove fundamental theorem of ring homomorphism.

Chairman

University Nominee

Subject Expert

Subject Expert

\*\*\*\*\*

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF PHYSICS  
MINUTES OF BOARD OF STUDIES**



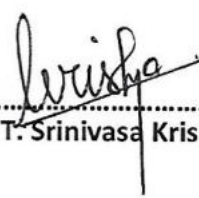
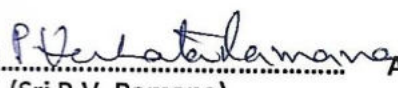




**ODD SEMESTER**

**02-11-2021**

Minutes of the meeting of Board of studies in Physics for the Autonomous course of A.G. & S.G. Siddhartha Degree College of Arts & Science, Vuyyuru held at 10.30 A.M on 02 – 11 - 2021 in the Department of Physics.

Sri U. Ram Prasad Presiding

Members Present:

- 1)  ..... Chairman  
(Sri U. Ram Prasad)  
Head, Department of Physics  
A.G. & S.G.S. Degree College of Arts & science,  
Vuyyuru - 521165
- 2)  ..... University Nominee  
(Dr. M. Rami Reddy)  
Registrar  
Krishna University,  
Machilipatnam.
- 3)  ..... Academic Council Nominee  
(Dr. T. Srinivasa Krishna)  
Associate Professor,  
H.O.D Dept. of Physics,  
P.B. Siddhartha college of arts & science,  
Vijayawada.
- 4)  ..... Academic Council Nominee  
(Sri P.V. Ramana)  
H.O.D Dept. of Physics,  
A.J. Kalasala,  
Machilipatnam.
- 5)  ..... Representative from Industry  
(Sri I. Chittibabu)  
Sub Divisional Engineer,  
BSNL,  
Vijayawada.
- 6)  ..... Alumini  
(Sri B. Dileep Kumar)  
Lecturer in Physics,  
Dept. of Physics, IIIT ,  
Nuzivid.
- 7)  ..... Member  
(Sri J. Hareeshchandra)  
Lecturer in Physics,  
A.G. & S.G.S. Degree College of Arts & Science,  
Vuyyuru - 521165.
- 8)  ..... Member  
(Sri M. Sateesh)  
Lecturer in Physics,  
A.G. & S.G.S. Degree College of Arts & Science,  
Vuyyuru - 521165.

9) M.P.D. Parimala  
(Smt. M.P.D. Parimala)

Member

Lecturer in Physics,

A.G. & S.G.S.Degree College  
of Arts & Science,  
Vuyyuru - 521165.

10) Sri J. Dileep  
(Sri J. Dileep)

Member

Lecturer in Physics,

A.G. & S.G.S.Degree College  
of Arts & Science,  
Vuyyuru - 521165.

### **Agenda for B.O.S Meeting**

- 1 .To recommend the syllabi and model papers for I semester of I Degree B.Sc., Physics for the Academic year 2021-2022.
2. To recommend the syllabi and model papers for III semester of II Degree B.Sc., Physics for the Academic year 2021-2022.
3. To recommend the syllabi and model papers for V semester of III Degree B.Sc. Physics for the Academic year 2021-2022.
4. To recommend the Blue print of question papers for I, III & V semesters of B.Sc. Physics for the Academic year 2021-2022.
5. To recommend the Guidelines to be followed by the question paper setters in Physics for I, III, V Semester – end exams.
6. To recommend the teaching and evaluation methods to be followed under Autonomous Status.
7. Any suggestions regarding seminars, workshops, Guest lecture to be organized.
8. Recommend the panel of paper setters and Examiners to the controller of Examinations of Autonomous Courses of A.G. & S.G.S. Degree colleges of Arts & Science, Vuyyuru.
9. Any other matter.

  
Chairman.

## RESOLUTIONS

- 1) It is resolved to Change the **syllabi and model papers for I semester of I B.Sc.** under Choice Based Credit System (CBCS 2020-2021 onwards) for the Academic year 2021-22.
- 2) It is resolved to change the **syllabi and model papers for III semester of II B.Sc. under Choice Based Credit System (CBCS 2020-2021 onwards) for the Academic year 2021-22** .
- 3) It is resolved to follow the same **syllabi and model papers** under Choice Based Credit System (CBCS) prescribed by Krishna University for **V semester of III B.Sc.**
- 4) It is resolved to change the **Blue print** of I and III semesters of Degree I & II B.Sc. for the Academic year 2021-22.
  - It is resolved to continue the same **Blue prints** of V semester of Degree B.Sc. for the Academic year 2021-22 also.
- 5) It is resolved to change the **Guidelines** of I and III semesters of Degree I & II B.Sc. for the Academic year 2021-22.
  - It is resolved to continue the same **Guidelines** of V semesters of Degree B.Sc. for the Academic year 2021-22.
- 6) It is resolved to continue the following teaching and evolution methods for Academic year 2021-2022.

### Teaching Methods:

Besides the conventional methods of teaching, we use modern technology i.e. using of LCD projector, U boards, virtual lab etc, for better understanding of concepts.

### Evaluation of a student is done by the following procedure:

#### ➤ Internal Assessment Examinations:

- For I B.SC.(sem I) out of 100 marks in each paper, 25 marks shall be allocated for internal assessment and 75 marks shall be allotted for external valuation.
- Out of these 25 marks, **15 marks are allocated for announced tests (i.e.IA-1 & IA-2)**. Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, **5 marks** are allocated on the basis of candidate's **percentage of attendance and remaining 5 marks are allocated for the assignment**.
- For II B.SC.(sem III) out of 100 marks in each paper, 30 marks shall be allocated for internal assessment and 70 marks shall be allotted for external valuation.
- For III B.Sc (**i.e. V semester**) out of 100 marks in each paper, 30 marks shall be allocated for internal assessment and 70 marks shall be allotted for external valuation.
- Out of these 30 marks, **20 marks are allocated for announced tests (i.e.IA-1 & IA-2)**. Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, **5 marks** are allocated on the basis of candidate's **percentage of attendance, and 5 marks** are allocated for **assignment / class room seminars**.

➤ **Semester – End Examination:**

- The maximum marks for I B.Sc. Semester I – End examination shall be 75 marks and duration of the examination shall be 3 hours.
  - The maximum marks for II B.Sc. and III B.Sc. Semesters III and V – End examination shall be 70 marks and duration of the examination shall be 3 hours.
  - **Semester – End examinations** in theory papers and **practical Examinations** shall be conducted at the end of every semester **I, III & V for I, II & III B.Sc.**
- 7) Discussed and recommended for organizing seminars, **Guest lecturers, workshops** to upgrade the knowledge of students, for the approval of the academic council.
  - 8) Discussed and empowered the Head of the department of Physics to suggest the panel of paper setters and examiners to the controller of examinations.
  - 9) Proposed to conduct add on Programme /Certificate course.

  
Chairman



**A.G & S.G Siddhartha Degree College of Arts and Science, Vuyyuru**  
**(An Autonomous college in the jurisdiction of Krishna University)**  
**Accredited at the 'A' level by NAAC**  
**SEMESTER- I**  
**PAPER- I Total hrs-60**  
**MECHANICS, WAVES AND OSCILLATIONS Credits-3**

**Course outcomes:**

On successful completion of this course, the students will be able to:

- CO1:** Understand Newton's laws of motion and motion of variable mass system and its application to rocket motion and the concepts of impact parameter, scattering cross section.
- CO2:** Apply the rotational kinematic relations, the principle and working of gyroscope and its applications and the precessional motion of a freely rotating symmetric top. Comprehend the general characteristics of central forces and the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.
- CO3:** Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence. Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.
- CO4:** Appreciate the formulation of the problem of coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.
- CO5:** Figure out the formation of harmonics and overtones in a stretched string and acquire knowledge on Ultrasonic waves, their production and detection and their applications in different fields.

**A.G & S.G Siddhartha Degree College of Arts and Science, Vuyyuru**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam A.P. India)

<b>PHYSICS</b>	<b>PHY-101C</b>	<b>2020-2021</b>	<b>B.Sc. (MPC&amp;MPCs)</b>
----------------	-----------------	------------------	-----------------------------

**Semester-I**

**Work load:** 60 hrs per semester

4 hrs/week

**Credits – 4**

**Paper-III      MECHANICS, WAVES AND OSCILLATIONS**

UNIT-I:

**1. Mechanics of Particles (5 hrs)**

Review of Newton's Laws of Motion, Motion of variable mass system, Multistage rocket, Concept of impact parameter, scattering cross-section, Rutherford scattering-Derivation.

**2. Mechanics of Rigid bodies (7 hrs)**

Rigid body, rotational kinematic relations, Equation of motion for a rotating body, Angular momentum and Moment of inertia tensor, Euler equations, Precession of a spinning top, Gyroscope, Precession of the equinoxes

Unit-II:

**3. Motion in a Central Force Field (12hrs)**

Central force - definition and examples, characteristics of central forces, conservative nature of central forces, Equation of motion under a central force, Kepler's laws of planetary motion-Proofs, Motion of satellites – **escape velocity, orbital velocity**, Basic idea of Global Positioning System (GPS),

UNIT-III:

**4. Relativistic Mechanics (12 hrs)**

Introduction to relativity, Frames of reference - Galilean transformations, absolute frames, Michelson-Morley experiment & negative result, Postulates of Special theory of relativity, Lorentz transformation, time dilation, length contraction, variation of mass with velocity, Einstein's mass-energy relation

Unit-IV:

### 5. **Undamped, Damped and Forced oscillations:** (07 hrs)

Simple harmonic oscillator, Damped harmonic oscillator, Forced harmonic oscillator –differential equations and solutions, Resonance, Logarithmic decrement, Relaxation time and Quality factor.

### 6. **Fourier analysis** (05 hrs)

**Fourier theorem (Statement & limitations), evaluation of the Fourier coefficients using Fourier's theorem, analysis of periodic wave functions - square wave, triangular wave.**

Unit-V:

### 7. **Vibrating Strings:** (07 hrs)

Transverse wave propagation along a stretched string, General solution of wave equation and its significance, Modes of vibration of stretched string clamped at ends, Overtones and Harmonics.-

### 8. **Ultrasonics:** (05 hrs)

Ultrasonics, General Properties of ultrasonic waves, Production of ultrasonics by piezoelectric and magnetostriction methods, Detection of ultrasonics, Applications of ultrasonic waves, SONAR

### **STUDENT ACTIVITY**

1. Seminars
2. Assignments.

### **LIBRARY ACTIVITY**

Student visit library to refer and gather information regarding seminar topics and assignments.

### **TEXT BOOKS**

1. B. Sc. Physics, Vol.1, Telugu Academy, Hyderabad
2. Unified Physics - Waves and Oscillations, Jai PrakashNath & Co.Ltd.

### **REFERENCE BOOKS:**

1. Fundamentals of Physics Vol. I - Resnick, Halliday, Krane, Wiley
2. College Physics-I. T. Bhimasankaram and G. Prasad. Himalaya Publishing House.
3. University Physics-FW Sears, MW Zemansky & HD Young, Narosa Publications, Delhi
4. Mechanics, S.G. Venkatachalapathy, Margham Publication, 2003.
5. Waves and Oscillations. N. Subramanyam and Brijlal, VikasPulications.
6. Waves & Oscillations. S. Badami, V. Balasubramanian and K.R. Reddy, Orient Longman.

7. The Physics of Waves and Oscillations, N.K. Bajaj, Tata McGraw Hill
8. Science and Technology of Ultrasonics- Baldevraj, Narosa, New Delhi,2004

### **Model Question Paper**

#### **Mechanics, Waves and Oscillations**

#### **SECTION-A**

Answer the following:

5 x 10 = 50 M

- 1 A) What is Rutherford scattering? Obtain an expression for number of particles scattered per unit area. ( CO1).

(OR)

B) What is precessional motion? Find angular velocity of precession of a spinning top. Show that the rate of precession is independent of mass but depends on the distribution of mass. ( CO2).

2. A) What is conservative force? Show that central forces are conservative. ( CO2).

(OR)

B) State Kepler's third law of motion. And prove that the square of period of revolution of a planet moving in a circular orbit round the sun is proportional to the cube of its distance from the sun. ( CO2)

- 3 A) State the fundamental postulates of special theory of relativity and deduce the Lorentz transformations. ( CO3)

(OR)

B) Describe the Michelson-Morley experiment and explain the physical significance of negative results. ( CO3)

- 4 A) What are damped oscillations? Derive the differential equation of damped Harmonic oscillator and discuss the case of under damping. ( CO3).

(OR)

B) State Fourier Theorem and evaluate Fourier coefficients. ( CO4).

- 5 A) What are transverse waves? Obtain the equation of velocity of transverse wave in a wire kept under tension. ( CO5).

(OR)

B) What are ultrasonics? Describe Magnetostriction method of producing ultrasonics (CO5).

### SECTION-B

Answer any **THREE** of the following questions:

3x5=15M

6. State Newton's laws of motion and give two examples each. (CO1)
7. Explain central forces with examples. (CO2)
8. Explain time dilation. (CO3)
9. What is logarithmic decrement and relaxation time? (CO4)
10. Explain overtones and harmonics. (CO5)

### Section – C

2X5=10M

Answer any **TWO** of the following:

11. The kinetic energy of metal disc rotating at a constant speed of 5 revolutions per second is joules. Find the angular momentum of the disc. (CO2)
12. If the Earth be one-half of its present distance from the sun, what will be the number of days in a year (CO2)
13. If the energy note of frequency 100Hz decreases to one half of its original value in one second, calculate the Q-factor, (CO4)
13. A piezoelectric crystal has a thickness of 0.002m. If the velocity of sound wave in crystal is 5750m/s, calculate the fundamental frequency of crystal. (CO5)

## Practical Course 1: Mechanics, Waves and Oscillations

**Work load:** 30 hrs

2 hrs/week

**Credits:**01

### Course outcomes (Practicals):

On successful completion of this practical course, the student will be able to:

- CO 1.** Perform experiments on Properties of matter such as the determination of moduli of elasticity viz., Young's modulus, Rigidity modulus of certain materials; Surface tension of water, Coefficient of viscosity of a liquid, Moment of inertia of some regular bodies by different methods and compare the experimental values with the standard values.
  
- CO 2.** Know how to determine the acceleration due to gravity at a place using Compound pendulum and Simple pendulum.
  
- CO 3.** Notice the difference between flat resonance and sharp resonance in case of volume resonator and sonometer experiments respectively.
  
- CO 4.** Verify the laws of transverse vibrations in a stretched string using sonometer and comment on the relation between frequency, length and tension of a stretched string under vibration.
  
- CO 5.** Demonstrate the formation of stationary waves on a string in Melde's string experiment.
  
- CO 6.** Observe the motion of coupled oscillators and normal modes.

### EXPERIMENTS LIST:

1. Young's modulus of the material of a bar (scale) by uniform bending
2. Young's modulus of the material a bar (scale) by non- uniform bending
3. Surface tension of a liquid by capillary rise method

4. Simple pendulum- normal distribution of errors-estimation of time period and the error of the mean by statistical analysis
5. Determination of 'g' by compound/bar pendulum
6. Verification of laws of vibrations of stretched string –Sonometer
7. Bifilar suspension –Moment of inertia of a regular rectangular body.
8. Rigidity modulus of material of a wire-Dynamic method (Torsional pendulum)
9. Volume resonator experiment
10. Viscosity of liquid by the flow method (Poiseuille's method)
11. Determination of the force constant of a spring by static and dynamic method. Coupled oscillators
12. Determination of frequency of a bar –Melde's experiment.

Note :

1. 9 (NINE) experiments are to be done and recorded in the lab. These experiments will be evaluated in CIA.
2. For certification minimum of 7 (Seven) experiments must be done and recorded by student who had put in 75 % of attendance in the lab.
3. **Best 6 experiments are to be considered for CIA.**
4. 10 marks for CIA.
5. 40 marks for practical exam.

**The marks distribution for the Semester End practical examination is as follows:**

Formula/ Principle / Statement with explanation of symbols	05
Diagram/Circuit Diagram / Tabular Columns	05
Setting up of the experiment and taking readings/Observations	10
Calculations (explicitly shown) + Graph + Result with Units	05
Procedure and precautions	05
Viva-voce	05
Record	05
<b>Total Marks:</b>	<b>40</b>

**A.G & S.G Siddhartha Degree College of Arts and Science, Vuyyuru**

*(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam A.P. India)*

**Semester-III**

**Work load:** 60 hrs

4 hrs/week

**Credits:** 03

**Paper-III**      ***THERMODYNAMICS AND RADIATION PHYSICS*** PHY301C

**COURSE OUTCOMES**

Upon successful completion of this course, students should have the knowledge and skills to:

- CO1            Understand the microscopic behavior of molecules, interactions and the concepts of transport phenomena of heat transfer, mass transfer and momentum transfer.
- CO2            State the First Law and define heat, work, thermal efficiency and the difference between various forms of energy and describe energy exchange processes, reversible and irreversible process.
- CO3            Derive thermodynamic potentials from first principles and derive the Maxwell relations.
- CO4            Understand very low temperatures like the concept of Joule Thomson effect, Liquefaction of gases and the properties at very low temperatures.
- CO5            Understanding of Black-body radiation as the thermal electromagnetic radiation and the statistical principles to the mechanical behavior of large number of small particles.



**A.G & S.G Siddhartha Degree College of Arts and Science, Vuyyuru**

*(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam A.P. India)*

<b>PHYSICS</b>	<b>PHY-301C</b>	<b>2020-2021</b>	<b>B.Sc. (MPC&amp;MPCs)</b>
----------------	-----------------	------------------	-----------------------------

**Semester-III**

**Work load:** 60 hrs per semester

4 hrs/week

**Credits – 4**

**Paper-III**

***THERMODYNAMICS AND RADIATION PHYSICS***

UNIT-I:

**Kinetic Theory of gases:** (12 hrs)

Kinetic Theory of gases-Introduction, Maxwell's law of distribution of molecular velocities (qualitative treatment only), Mean free path, Degrees of freedom, Principle of equipartition of energy (Qualitative ideas only), Transport phenomenon in ideal gases: viscosity, Thermal conductivity and diffusion of gases.

UNIT-II:

**Thermodynamics:** (12hrs)

Introduction- Isothermal and Adiabatic processes, Reversible and irreversible processes, Carnot's engine and its efficiency, Carnot's theorem, Thermodynamic scale of temperature and its identity with perfect gas scale, Second law of thermodynamics - Kelvin's and Clausius statements; ~~Principle of refrigeration~~; Entropy, Physical significance, Change in entropy in reversible and irreversible processes; Entropy and disorder-Entropy of Universe; Temperature-Entropy (T-S) diagram and its uses - change of entropy when ice changes into steam (**Qualitative**).

UNIT-III:

**Thermodynamic Potentials and Maxwell's equations:** (12hrs) (**NO PROBLEM**)

Thermodynamic potentials-Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy and their significance, Derivation of Maxwell's thermodynamic relations from thermodynamic potentials, Applications to (i) Clausius-Clayperon's equation (ii) Value of  $C_p - C_v$  (iii) Value of  $C_p/C_v$  (iv) Joule-Kelvin coefficient for ideal and Van der Waals' gases

UNIT-IV:

**Low temperature Physics: (12hrs)**

Methods for producing very low temperatures, Joule Kelvin effect, Porous plug experiment, Joule expansion, Distinction between adiabatic and Joule Thomson expansion, Expression for Joule Thomson cooling, Production of low temperatures by adiabatic demagnetization **(Derivation)**, Principle of Refrigeration, effects of chloro and fluoro carbons on ozone layer.

UNIT-V:

**Quantum theory of radiation: (12 hrs)**

Blackbody and its spectral energy distribution of black body radiation, Kirchoff's law, Wein's displacement law, Stefan-Boltzmann's law and Rayleigh-Jean's law (No derivations), Planck's law of black body radiation-Derivation, Deduction of Wein's law and Rayleigh- Jean's law from Planck's law, Solar constant and its determination using Angstrom pyroheliometer, Estimation of surface temperature of Sun.

**TEXT BOOKS**

1. BSc Physics, Vol.2, Telugu Akademy, Hyderabad
2. Unified Physics Vol.2, Optics & Thermodynamics, Jai Prakash Nath &Co.Ltd., Meerut

**REFERENCE BOOKS:**

1. Thermodynamics, R.C. Srivastava, S.K. Saha & Abhay K. Jain, Eastern Economy Edition.
2. Fundamentals of Physics. Halliday/Resnick/Walker.C. Wiley India Edition 2007
3. Heat, Thermodynamics and Statistical Physics-N Brij Lal, P Subrahmanyam, P S Hemne, S. Chand& Co., 2012
4. Heat and Thermodynamics- MS Yadav, Anmol Publications Pvt. Ltd, 2000
5. University Physics, HD Young, MW Zemanski Sears, Narosa Publishers, New Delhi

**The Guidelines to be followed by the question paper setters in Physics for the III Semester - end exams**

**PAPER TITLE: Thermodynamics and Radiation Physics**

Paper- III Semester – III Maximum marks: 70 marks

Duration: 3Hours

Weightage for the question paper

<b>Syllabus</b>	<b>Section-A (Short answer questions)</b>	<b>Section-B (essay questions)</b>
<b>Unit-1(20 Marks)</b>	<b>T+P</b>	<b>1</b>
<b>Unit-2(30 Marks)</b>	<b>T+P</b>	<b>2</b>
<b>Unit-3(15Marks)</b>	<b>T</b>	<b>1</b>
<b>Unit-4(25 Marks)</b>	<b>T</b>	<b>2</b>
<b>Unit-5(30 Marks)</b>	<b>T+P</b>	<b>2</b>

**Note:** T means one theory question, P means one problem

- **Section-A** contains **5** short questions and **3** problems out of these **8** questions, the student has to answer any **4**, each question carries **5** marks.
- **Section –B** contains **8** essay questions, the student has to answer any **5** questions, each question carries **10** marks.
- The Question papers setters are requested to cover all the topics in the syllabus as per the weightage given by us.

## Model Question Paper

### Title of the Paper: Thermodynamics and Radiation Physics

#### Section-A

Answer any **FOUR** of the following:

4X5=20M

1. Write a note mean free path. (CO1)
2. Explain the second law of thermodynamics in terms of entropy. (CO2)
3. Prove  $C_p - C_v = R$  (CO3)
4. Explain the effects of chloro and fluoro carbons on ozone layer. (CO4)
5. Estimate the temperature of sun. (CO5)
6. Find the R.M.S velocity of hydrogen at N.T.P and at  $C^\circ$  (CO1)
7. Calculate the efficiency of a reversible engine that operates between the temperatures  $200^\circ\text{C}$  and  $120^\circ\text{C}$ ? (CO1)
8. Find the wavelength at which maximum energy is radiated by a black at a temperature of  $227^\circ\text{C}$  and wien's constant is  $2.877 \times 10^{-3} \text{mk}$ . (CO1)

#### Section-B

Answer any **FIVE** of the following:

5X10=50M

9. Derive an expression for Maxwell's law of distribution of molecular speeds in a gas. (CO1)
10. Describe the working of Carnot's reversible engine and derive an expression for its efficiency. (CO2)
11. What are reversible and irreversible processes? How does the entropy change in each of these processes? (CO2)
12. Define the four thermodynamic potentials. Obtain Maxwell's thermodynamic equations using these potentials. (CO3)
13. What is adiabatic demagnetization? How is this principle used in producing low temperatures? (CO4)
14. Explain Joule-kelvin effect. Derive an expression for Joule-Thompson cooling. (CO4, )

15. Derive the Planck's formula for the distribution of energy in black body radiation. (CO5)
16. Describe the construction and working of Angstrom pyroheliometer (CO5)

**A.G & S.G Siddhartha Degree College of Arts and Science, Vuyyuru**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

<b>PHYSICS</b>	<b>PHYP301C</b>	<b>2020-21</b>	<b>B.Sc. (MPC&amp;MPCs)</b>
----------------	-----------------	----------------	-----------------------------

**Practical Paper III: Thermodynamics and Radiation Physics Lab**

Work load: 30hrs

2 hrs/week

Credits: 01

**Objectives:**

The primary objective of this course is to provide the fundamental knowledge to understand the behaviour of thermal systems.

This course provides a detailed necessary transfer through solids, fluids, and experimental analysis, including the application and heat vacuum.

Convection, conduction, and radiation heat transfer in one and two dimensional steady and unsteady systems are examined.

**COURSE OUTCOMES**

Upon successful completion of this course, students should have the knowledge and skills to:

- CO1: Determine the thermal conductivity of bad conductor-Lee's method, thermal conductivity of rubber and Coefficient of thermal conductivity of copper by using Searle's apparatus.
- CO2: Study the heating efficiency of electrical kettle with varying voltages.
- CO3: Determine Specific heat of a liquid by Joule's calorimeter and study Barton's radiation correction by plotting a graph between temperature and time and Specific heat of a liquid by applying Newton's law of cooling correction.
- CO4: Study temperature variation of resistance in a thermostat.
- CO5: Study the heating efficiency of electrical kettle with varying voltages.

## List of experiments

1. Study of variation of resistance with temperature - Thermistor.
2. Thermal conductivity of bad conductor-Lee's method
3. Thermal conductivity of rubber.
4. Measurement of Stefan's constant - emissive method
5. Heating efficiency of electrical kettle with varying voltages.
6. Specific heat of a liquid –Joule's calorimeter –Barton's radiation correction
7. Specific heat of a liquid by applying Newton's law of cooling correction.
8. Thermo emf- thermo couple - Potentiometer
9. Thermal behavior of an electric bulb (filament/torch light bulb)
10. Measurement of Stefan's constant

Note :

1. 9 (NINE) experiments are to be done and recorded in the lab. These experiments will be evaluated in CIA.
2. For certification minimum of 7 (Seven) experiments must be done and recorded by student who had put in 75 % of attendance in the lab.
3. **Best 6 experiments are to be considered for CIA.**
4. 10 marks for CIA.
5. 40 marks for practical exam.

**The marks distribution for the Semester End practical examination is as follows:**

Formula/ Principle / Statement with explanation of symbols	05
Diagram/Circuit Diagram / Tabular Columns	05
Setting up of the experiment and taking readings/Observations	10
Calculations (explicitly shown) + Graph + Result with Units	05
Procedure and precautions	05
Viva-voce	05
Record	05
<b>Total Marks:</b>	<b>40</b>

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**(AUTONOMOUS), VUYYURU – 521 165**

**III B.Sc. 5<sup>th</sup> Semester (2020-2021)**

**Paper V: Electricity, Magnetism and Electronics**

**Work load:60 hrs per semester                      4 hrs/week      Course Code : PHY 501C**

**Unit – I(12hrs)**

**1.Electrostatics**

Gauss's law Statement and its proof-Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electric potential- Equipotential surface –potential due to i) a point charge ii) charged spherical shell .

**2.Dielectrics**

Electric dipole moment and molecular polarizability- Electric displacement D, electric polarization P – relation between D, E, and P- Dielectric constant, susceptibility .

**Unit – II(12hrs)**

**3. Electric and magnetic field**      Biot – Savart's law and calculation of B due to long straight wire, a circular current loop and solenoid.      Hall effect-determination of Hall coefficient and applications.

**4.Electromagnetic-induction**

Faraday's law – Lenz's law self and mutual inductance, coefficient of coupling, calculation of self inductance of a long solenoid, energy stored in magnetic field. Transformer- energy losses and efficiency.

**Unit-III(12hrs)**

**5.Alternating current and electro magnetic waves**

Alternating current –Relation between current and voltage in LR and CR circuits, vector diagrams, LCR series and parallel resonant circuit , Q- factor, power in AC circuits.

**6.Maxwell's equations**

Idea of displacement current- Maxwell's equations (integral and differential forms ) (no derivation) Maxwell's wave equation(with derivation), Transverse nature of electromagnetic wave. Poining Vector (statement and proof) production of electromagnetic wave Hertz experiment.

**Unit-IV(12hrs)**

**7.Basic electronics:**

PN junction diode Zener diode ,I-V characteristics, PNP and NPN Transistors, CB,CE and CC configuration Relation between  $\alpha$   $\beta$  and  $\Gamma$  transistors (CE) characteristics, Transistor as an amplifier.

**Unit-V(12hrs)**

**Digital electronics:**

Number systems-conversion of binary to decimal system and vice versa. Binary addition and subtraction (1's and 2's complement methods) laws of Boolean algebra-De Morgan's laws-statement and proof basic logic gates, NAND and NOR as universal gates Half adder and FULL adder.



## REFERENCE BOOKS

- 1) BSC Physics vol.3 Telugu Akademy, Hyderabad.
- 2) Electricity, Magnetism D,N Vasudeva. S.chand & co.,
- 3) Electricity, Magnetism and Electronics, K.K.Tewai, R.Chand &co.,
- 4) Principles of electronics, V.K.Mehta, S.Chand &co.,
- 5) Digital principles and applications A.P Malvino and D.P.Leach, Mc GrawHILL Edition.

**The Guidelines to be followed by the question paper setters in Physics for the V Semester - end exams**

## **PAPER TITLE: Electricity, Magnetism and Electronics**

Paper- V Semester – V Maximum marks: 70 marks Duration: 3Hours  
Weightage for the question paper

<b>Syllabus</b>	<b>Section-A (Short answer questions)</b>	<b>Section-B (essay questions)</b>
<b>Unit-1 (25 Marks)</b>	<b>T</b>	<b>2</b>
<b>Unit-2 (20 Marks)</b>	<b>T+P</b>	<b>1</b>
<b>Unit-3 (30Marks)</b>	<b>T+P</b>	<b>2</b>
<b>Unit-4 (20 Marks)</b>	<b>T+T</b>	<b>1</b>
<b>Unit-5 (25 Marks)</b>	<b>T</b>	<b>2</b>

**Note:** **T** means one theory question, **P** means one problem

- **Section-A** contains **6** short questions and **2** problems out of these **8** questions, the student has to answer any **4**, each question carries **5** marks.
- **Section –B** contains **8** essay questions, the student has to answer any **5** questions, each question carries **10** marks.
- The Question papers setters are requested to cover all the topics in the syllabus as per the weightage given by us.

<b>V</b>	<b>SEMESTER –</b>	<b>COURSE CODE :</b> <b>PHY- 501 C</b>
<b>PAPER TITLE : Electricity, Magnetism and Electronics</b>		

Duration : 3Hours                      Maximum marks : 70                      Pass marks : 28 marks

MODEL PAPER

**III B.Sc. (PHYSICS)- V SEMESTER**  
**ELECTRICITY, MAGNETISM AND ELECTRONICS**

TIME: 3 Hrs                      PHY – 501 C                      MAX MARKS: 70                      PASS MARK : 28

.....  
SECTION – A

**ANSWER ANY FOUR OF THE FOLLOWING**                      (4 X 5 = 20 M)

- 1) Write a short note on equi - potential surfaces
- 2) obtain an expression for energy stored in a magnetic field
- 3) Derive expression for power in ac circuit
- 4) Explain CE configuration of a transistor
- 5) Explain briefly how a transistor works as an amplifier
- 6) Explain about half adder circuit with truth table.
- 7) Calculate the intensity of the magnetic field at the center of a circular coil of radius 20 cm and 40 turns having a current of 2A in it.
- 8) In a series RLC circuit  $R = 100 \text{ ohm}$ ,  $L = 0.5\text{H}$  and  $C = 0.4 \mu\text{F}$ . calculate resonant frequency

SECTION – B

**ANSWER ANY FIVE OF THE FOLLOWING QUESTIONS** (5 X 10 = 50 M)

- 9) Derive an expression for the electric field due to uniformly charged sphere using Gauss law?
- 10) Define D, E and P derive the relation between them
- 11) Calculate the magnetic induction due to a long straight wire using Biot- savart's law
- 12) State and prove pointing theorem
- 13) Explain the growth and decay of charge in LR- circuit
- 14) Describe the construction and working of Zener diode.
- 15) State and prove De Morgan's theorem with examples.
- 16) Explain about basic logic gates with truth tables.

## **Practical paper V: Electricity, Magnetism and Electronics**

Exam duration : 3Hours

Maximum marks : 50 marks

**Work load:30hrs**

**Minimum of 6 experiments to be done and recorded**

1. Figure of merit of a moving coil galvanometer.
2. LCR circuit series/parallel resonance, Q-factor
3. Determination of Ac-frequency-sonometer
4. Verification of Kirchoff's laws
5. Field along the axis of a circular coil carrying current.
6. PN Junction diode Characteristics
7. characteristics of Zener diode
8. Transistor CE Characteristics.
9. Logic Gates –OR ,AND, NOT,and NAND gates verification of truth tables.
10. Verification of De Morgan's theorems.

**DEPARTMENT OF PHYSICS**  
**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &**  
**SCIENCE**

**(AUTONOMOUS), VUYYURU – 521 165**

**III B.Sc. Physics – V Semester – Paper –VI (2020 – 2021)**

**Modern Physics**

**Course Code : PHY 502C Work Load : 60 hrs per semester 4 hrs/week**

**Unit – I (12 hrs) 1. Atomic and molecular physics**

Introduction – Drawbacks of Bohr's atomic model – Sommerfeld's elliptical orbits-relativistic correction (no derivation). Vector atom model and Stern & Gerlach experiment - quantum numbers associated with it. L-S and j-j coupling schemes. Zeeman Effect and its experimental study.

Raman effect, Stokes and Anti Stokes lines . Quantum theory of Raman effect. Experimental arrangement – Applications of Raman effect.

**UNIT – II (12 hrs) 2. Matter waves & Uncertainty Principle**

Matter waves, de Broglie's hypothesis – wavelength of matter waves, Properties of matter waves – Davisson and Germer experiment, uses of electron diffraction-Phase velocity and Group velocity (definitions only)- relation between phase velocity and Group velocity-Heisenberg's uncertainty principle for position and momentum (x and p) & energy and time (E and t). Experiment verification.

**UNIT – III (12 hrs) 3. Quantum (wave) mechanics**

Basic postulates of quantum mechanics – Schrodinger time independent and time dependent wave equation – derivations. Physical interpretation of wave function. Applications of Schrodinger wave equation to particle in one dimensional infinite box. Harmonic oscillator.

**UNIT – IV (12 hrs) 4. General properties of Nuclei**

Basic ideas of nucleus – size, mass, charge density (matter energy), binding energy, angular momentum, parity, magnetic moment, electric quadrupole moments. Liquid drop model and shell model (qualitative aspects only)- Magic numbers.

**5. Radioactivity decay**

Alpha decay : basis of  $\alpha$  – decay processes. Range of  $\alpha$ -particles , Geiger's Law, Geiger- Nuttal law.  $\beta$  – decay,  $\beta$  ray continuous and discrete spectrum, neutrino hypothesis.

**UNIT – V (12 hrs)**

**6. Crystal structure**

Amorphous and crystalline materials, unit cell, Miller indices, reciprocal lattice, types of lattices, diffraction of X- rays by crystals, Bragg's law, experimental techniques, Laue's method and powder diffraction method.

**7. Superconductivity:**

Introduction – experimental facts, critical temperature – critical field – Meissner effect – isotope effect – Type I and Type II superconductors – BCS theory (elementary ideas only) – applications of superconductors.

## REFERENCE BOOKS :

1. B.Sc physics, VOL .4, Telugu academy , Hyderabad.
2. Molecular structure and spectroscopy by G.Aruldas. prentice Hall of india , New Delhi.
3. Modern physics by R.Murugeshan and Kiruthiga siva prasanth. S. Chand & co.
4. Modern physics by G.Aruldas & p. Rajagopal. Eastren economy edition.
5. Concepts of Modern physics by Arthur Beiser. Tata McGrew – Hill Edition.
6. Quantum Mechanics, Mahesh c Jain , Eastern Economy EDITION
7. Nuclear Physics ,Irving Kaplan, Narosa Publishing House.
8. Nuclear physics , D.C Tayal, Himalaya publishing house.
9. Elements of solid state physics, J.P srivastava, Prentice Hall of india pvt. Ltd.
10. Solid state physics, A.J.Dekkar, McMillan India.

**The Guidelines to be followed by the question paper setters in Physics for the V Semester - end exams**

## PAPER TITLE: Modern Physics

Paper- VI Semester – V Maximum marks: 70 marks Duration: 3Hours  
Weightage for the question paper

Syllabus	Section-A (Short answer questions)	Section-B (Essay questions)
Unit-1 (25 Marks)	T	2
Unit-2 (20 Marks)	T+P	1
Unit-3 (25Marks)	T	2
Unit-4 (20 Marks)	T+T	1
Unit-5 (30 Marks)	T+P	2

**Note:** T means one theory question, P means one problem

- **Section-A** contains 6 short questions and 2 problems out of these 8 questions, the student has to answer any 4, each question carries 5 marks.
- **Section – B** contains 8 essay questions; the student has to answer any 5 questions. Each question carries 10 marks.

The Question papers setters are requested to cover all the topics in the syllabus as per the weightage given by us.

<b>SEMESTER – V</b>	<b>COURSE CODE : PHY-502</b>
<b>PAPER TITLE : Modern Physics (<u>Model Paper</u>)</b>	

Duration : 3Hours

Maximum marks : 70

Pass marks : 28 marks

**III B.Sc. Physics – V Semester – Paper –VI (2020 – 2021)**  
**Modern Physics**

**Paper Code : PHY 502C**

**SECTION-A**

---

Answer any FOUR questions

**(4x5=20M)**

1. Write the Draw backs of Bohr's atomic model.
2. Explain deBroglie concept of matter waves.
3. Explain Geiger-Nuttal law.
4. Write a note on liquid drop model.
5. Explain Meissner effect in super conductivity.
6. State postulates of Quantum Mechanics.
7. In a crystal lattice plane cuts intercepts  $2a$ ,  $3b$  and  $6c$  along the three axes where  $a, b$  and  $c$  are primitive vectors of the unit cell. Determine the miller indices of the given plane.
8. If the uncertainty in position of an electron is  $4 \times 10^{-10} \text{m}$  and uncertainty in its momentum is  $1.65 \times 10^{-24} \text{kg m/sec}$ .

**SECTION-B**

Answer any FIVE questions :

**(5x10=50M)**

9. Describe Stern and Gerlach experiment and discuss the importance of the results obtained
10. What is Raman Effect? Write the Experimental setup to study Raman Effect.
11. Describe Davisson and Germer Experiment on electron diffraction. Discuss the results of the Experiment.
12. Derive Time independent Schrodinger wave equation.
13. Calculate the energy of a particle in one dimensional box using Schrodinger equation.
14. Mention the Basic Properties of Nucleus with reference to Size, Charge, Mass, Nuclear spin and Electric Quadra pole Moment.
15. Describe X-Ray diffraction by Laue's method.
16. Explain Type-I and Type-II Superconductors.

## **Practical Paper VI : Modern Physics**

Exam duration : 3Hours      Maximum marks : 50 marks

**Work load : 30 hrs**

**3 hrs.**

**Minimum of 6 experiments to be done and recorded**

1.  $e/m$  of an electron by Thomson method.
2. Determination of Planck's Constant (photocell)
3. Verification of inverse square law of light using photovoltaic cell.
4. Study of absorption of  $\alpha$  – rays.
5. Study of absorption of  $\beta$  – rays.
6. Determination of range of  $\beta$  – particles.
7. Determination of M & H.
8. Analysis of powder X- ray diffraction pattern to determine properties of crystals.
9. Energy gap of semiconductor using junction diode.
10. Energy gap of a semiconductor using Thermistor.

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF HISTORY**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**30-10-2021**





**A.G & S.G SIDDHARTHA DEGREE  
COLLEGE OF ARTS AND  
SCIENCE::VUYYURU**

(An Autonomous College in the Jurisdiction of Krishna University)  
Accredited at the level 'A' by the NAAC  
Sponsors: Siddhartha Academy of General & Technical Education

**DEPARTMENT OF POLITICAL SCIENCE**

Minutes of the meeting of Board of Studies in Political Science of A.G. & S.G Siddhartha Degree College of Arts & Science, Vuyyuru held at 10:00 A.M On 30/10/2021 in the Department of Political Science

Members Present		
Name of the Member	Role	Signature
Smt. Ch. Sandhya Rani, HOD, Dept. of Political Science, A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru-521165. Mobile: 9949402837 E-Mail: narrasandhyarani@gmail.com	Chairman	
Sri. M. Padmanabham, Assistant Professor, Dept of Political Science, SRR & CVR Govt Degree College, Vijayawada. Mobile: 9490772836	University Nominee, Krishna University	
Smt G.Padmaja, Head, Department of Political Science, S.D.M. Siddhartha Mahila Kalasala, Vijayawada. Mobile: 9441883417	Academic Council Nominee	
Dr.G.Veerraju, H.O.D & Assistant Professor, Dept of Political Science, Y.V.N.R Govt. Degree College, Kaikaluru. Mobile: 9440476494	Academic Council Nominee	
Sri. R.V.Siva Rao, Lecturer Dept. of Political Science, A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru-521165. Mobile:9391380250	Academic Council Member	

## **AGENDA**

1. To review and recommend changes to syllabi, model paper and guidelines in the 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> semesters of B.A
2. To discuss about and recommend the pattern of assessment i.e., internal and external assessment percentage to be followed for Third Semester from academic year 2021-2022
3. To recommend the the guidelines to be followed by the Question Paper Setters in Political Science for all semester-end exams.
4. To recommend the teaching and the evaluation methods to be followed under the Autonomous System.
5. To Suggest innovative methods of teaching
6. To propose the panel of Question Paper Setters and Examiners.

## RESOLUTIONS

Following resolutions are made in the Board of Studies in Political Science :

- 1.) To continue with the existing syllabi for first semester with out any change for the academic year 2021-22.
- 2.To Continue with the existing syllabi for third Semester without any change for the academic year 2021-22.
- 3) To continue with the existing syllabi for 5th semester without any change for the Academic Year 2021-2022.
- 4) To adapt 25 marks for internal assessment and 75 marks for external assessment for 1<sup>st</sup> Degree and 30 marks for internal assessment and 70 marks for external assessment for 2<sup>nd</sup> and 3<sup>rd</sup> year Degree from the Academic Year 2021-2022.
- 5) To follow the new model question paper from the Academic Year 2021-2022 for all the B.A Students
- 6) To adapt the following teaching and evaluation methods:

Teaching Methods:

Besides the conventional methods of teaching, it is also resolved to use various other methods like group discussions, quiz, developing power point presentation etc., for the better understanding of the contents.

### Evaluation Method for Internal Theory Examination for 1<sup>st</sup> B.A students

First Internal Exam	Second Internal Exam	Average	Attendance	Total
A	B	$C=(A+B) / 2$	D	(C+D)
20 Marks	20 Marks	20 Marks	5 Marks	25 Marks

### Evaluation Method for Internal Theory Examination for 2<sup>nd</sup> and 3<sup>rd</sup> B.A students

First Internal Exam	Second Internal Exam	Average	Assignment	Attendance	Total
A	B	$C=(A+B) / 2$	D	E	(C+D+E)
20 Marks	20 Marks	20 Marks	5 Marks	5 Marks	30 Marks

- 7) Semester End Examinations:

- 8) The maximum marks of sem-end examinations for 1<sup>st</sup> B.A are 75 and for 2<sup>nd</sup> and 3<sup>rd</sup> B.A students are 70 Marks from the Academic Year 2021-2022 for all the B.A Students and the duration of the examination shall be 3 Hours.
- 9) To Organize Seminars ,Guest Lectures and Workshops to upgrade the knowledge of the students and to impart new skills of learning as frequently as possible.
- 10) To authorize the chairman of board of studies to suggest the panel of paper setters and examiners to the controller of examinations as per the requirement.

**A.G &S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE VUYYURU-521165**

(An Autonomous College in the jurisdiction of Krishna University , Machilipatnam)

**Title of the paper: INTRODUCTION TO POLITICAL SCIENCE**

**Semester-I**

Course Code	POLTIIB	Course Delivery Method	Class Room
Credits	4	CIA Marks	25
No.of Lecture Hours/Week	5	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction 2020-2021	Year of offering 2021-2022	Year of Revision 2021-2022	Percentage of Revision 0%

**Course Context and overview:** To train students in order to have clear understanding of politics, related concepts such as government, state sovereignty, legitimacy, power, influence, authority, democracy, power, political participation, political system etc.

**COURSE OUTCOMES: INTRODUCTION TO POLITICAL SCIENCE**

**Course Outcomes:** At the end of the course the student will be able to:

**CO1:** Define important field-specific theories and concepts, and understand their role in developing political science Knowledge: L-1 , L-2

**CO2:** Summarize conceptual arguments or theoretical approaches. L-3 , L-4

**CO3:** Apply them to field relevant situations and support their application with appropriate evidence. L-3, L-4

**CO4:** Compare and evaluate the merits of multiple policies, theories or concepts from different disciplinary perceptions. L-5

**CO5:** With the course, students are expected to learn the political concepts and theory in the Basic Concepts of Political Science. L-1, L-2

## **Learning Outcome:**

On successful completion of the course the students will be able to:

- Recall the previous knowledge about Political Science and understand the nature and scope, traditional and modern approaches of Political Science.
- Understand concepts intrinsic to the study of Political Science.
- Have a solid theoretical understanding of Rights and its theories along with the basic aspects of certain political ideologies.
- Apply the knowledge to observe the field level phenomena.

### **UNIT:I INTRODUCTION:**

**15hrs.**

1. Definition, Nature, Scope and Importance of Political Science - Relations with allied Disciplines (History, Economics, Philosophy and Sociology)
2. Approaches to the study of Political Science:  
Traditional Approaches- Historical, Normative and Empirical Approaches.  
Modern Approaches:Behavioral and System Approach.

### **UNIT-II: STATE :**

**15 hrs**

Definition of the State, Elements of the State, Theories of Origin of the State-(Divine Origin , Force, Evolutionary and Social Contract),

1. Concepts of Modern State and Welfare State.

### **UNIT-III: CONCEPTS OF POLITICAL SCIENCE:**

**10 hrs**

1. Law, Liberty,
2. Power, Authority and Legitimacy

### **UNIT:IV: THEORIES OF RIGHTS:**

**10 hrs**

2. Meaning, Nature and Classification of Rights
3. Theories of Rights.

### **UNIT:V:POLITICAL IDEOLOGIES:**

**10 hrs**

1. Liberalism, Individualism and Anarchism.
2. Socialism, Marxism and Multiculturalism.

## REFERENCE BOOKS:

1. Sukhbir Bhatnagar : Constitutional Law and the Governance
2. A. C. Kapur : Select Constitution
3. R.C. Agarwal : Political Theory
4. Vidyadhar Mahajan : Political Theory(Principles of Pol.Sci.
5. Devi & V. Bhogendra Acharya,
6. Prof. V. Ravindra Sastry (ed) : Political Science Concepts, Theories & Institutions.
7. Jadi Musalaiah, V. Vasundhara
8. Laski H.J. : Grammar of Politics
9. A. Appadorai : Substance of Politics
10. Eddy Ashirvadam K.K. Misra : Political Theory
11. Sushila Ramaswamy : Political Theory: Ideas & Concepts
12. S.P. Varma : Modern Political Theory
13. O.P. Gauba : An Introduction to Political Science
14. Abbas, Hoveyda & Ranjay Kumar : Political Theory
15. Andrew Hakes : Political Theory, Philosophy, Ideology Science.
16. Rajeev Bhargava & Ashok Acharya (ed) : Political Theory An Introduction
17. Andrew Heywood : Political Ideologies-An Introduction
18. Norman Barry : An Introduction to Modern Political theory.

(An Autonomous college in the jurisdiction of Krishna University, Machilipatnam)

**Reaccredited at 'A Grade by NAAC**

**MODEL QUESTION PAPER (Semester-I) Course Code : POLTIIB**

**Time: 3 Hours**

**Max. Marks : 75**

**SECTION –A**

Answer any five of the following questions.

Each carries **FIVE** marks :

**( 5X5=25 Marks)**

- 1.What is Political Science? L1- CO1
- 2.System Approach? L1 - Co1
- 3.Explain Divine Origin Theory. L1 – L2-Co2
- 4.Discuss 'Hobbes views on Human Nature. L5-Co2
- 5.Describe the features of Welfare State. L5 – CO2
6. Explain the features of Modern State. L2-CO2
- 7.Explain the meaning and sources of Law. L2-Co3
8. Explain the types of Authority. L2,CO3

**SECTION –B**

**Answer the following : Each carries TEN marks.**

**( 5x10=50 Marks)**

9.(a) Define Political Science and explain its Scope. L1-CO1

(or)

(b)Explain the 'Normative Approach ' to the study of Political Science. L2-L4-CO1

10 (a)Define State and Elements its characteristics. Co2-L1

(or)



(b) Critically examine the Social Contract Theory of Hobbes. L1-L2-CO1

11. (a) What is Liberty? What are the kinds of Liberty? L2-L4-CO3

(or)

(b) Define Legitimacy and kinds of Legitimacy. L1-L2-COCo3

12. (a) 'Rights and Duties are the two sides of the same Coin' - Discuss,. L1-L5-Co4

(or)

(b) Define Right and discuss various kinds of Rights.. L2-CO4

13. (a) Critically examine 'Communism'. L5-Co5

(or)

(b) Explain the "Multiculturalism". L2-L3-Co1-Co5

## New syllabus

### B.A. POLITICAL SCIENCE SECONDYEAR

#### THIRD SEMESTER (Under CBCS w.e.f2020-21)

#### Course-3: INDIAN GOVERNMENT AND POLITICS

Course Code	POLT301C	Course Delivery Method	Class Room
Credits	4	CIA Marks	30
No.of Lecture Hours/Week	5	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction2020-2021	Year of offering 2021-2022	Year of Revision 2021-2022	Percentage of Revision 0%

#### Course Outcomes:

**CO1:** The students community has acquired knowledge of the making of the Indian Constitution and its philosophical background. L1

**CO2:** Information about the functionaries of the government both at the union and state level was acquainted by the student community.L1, L2

**CO3.**To Understand the legislative procedures which ensure the orderly conduct of business in our parliament and state legislative assemblies in **India.**

**CO4:** To understand know the Ministers, their role &responsibilities.L1,

**CO5:** To understand Judiciary of India.L1, L2

#### Learning Outcomes:

On successful completion of the course the students will be able to:

- Acquire knowledge about the historical background of Constitutional development in India, appreciate philosophical foundations and salient features of the Indian Constitution.

- Analyze the relationship between State and individual in terms of Fundamental Rights and Directive Principles of State Policy.
- Understand the composition and functioning of Union Government as well as State Government and finally
- Acquaint themselves with the judicial system of the country and its emerging trends such as judicial reforms.

UNIT-I :	SOCIAL AND IDEOLOGICAL BASE OF THE INDIAN CONSTITUTION	<b>15 hrs</b>
	1. Constitutional Development in India during British Rule-A Historical	
	2. Constituent Assembly-Nature, Composition, Socio-Economic, Philosophical Dimensions and Salient Features of the Indian	

UNIT-II	INDIVIDUAL AND STATE	<b>15 hrs</b>
	1. Fundamental Rights, Directive Principles of State Policy and Fundamental Duties-Differences between Fundamental Rights and Directive Principles of State Policy.	
	2. The 'Doctrine of Basic Structure of the Constitution' with reference to Judicial Interpretations and Socio-Political Realities.	

UNIT-III :	UNION EXECUTIVE	<b>10 hrs</b>
	1. President of India-Mode of Election, Powers and Functions.	
	2. Parliament-Composition, Powers and Functions, Legislative Committees, Prime Minister and Council of Ministers-Powers and	

UNIT-IV :	STATE EXECUTIVE	<b>10 hrs</b>
	1. Governor-Mode of Appointment, Powers and Functions.	
	2. Legislature-Composition, Powers and Functions, Chief Minister and	

UNIT-V :	THE INDIAN JUDICIARY	<b>10 hrs</b>
	1. Supreme Court-Composition and Appointments, Powers and	
	Functions or Jurisdiction of the Supreme Court, Judicial Review, Judicial	
	2. High Court-Composition, Powers and Functions, Debates on the	
	mode of appointment of Judges-National Judicial Appointments	

**A.G &S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
[AUTONOMOUS] VUYYURU-521165**

**SEMESTER-III          CODE-POLT301C ACADEMIC YEAR-2020-2021**

**PAPER TITLE:INDIAN GOVERNMENT AND POLITICS**

**Duration: 3 Hours          Maximum Marks:70          Pass Marks:28**

**Section-A**

Answer any **Two** of the following questions (2x5=10 Marks)

1. Explain the Indian Government act of 1935.
2. Describe the Fundamental duties of Indian citizens.
3. Discuss the various Legislative committees.
4. Judicial Review.

**Section-B**

Answer any **Four** of the following questions (4x15=60 Marks)

5. Explain the salient features of the Indian Constitution.
6. Explain the Fundamental Rights of the Constitution.
7. Explain the powers and Functions of the President of India.
8. Explain the powers and Functions of Chief Minister.
9. Describe the structure and Functions of Supreme Court of India.
10. Explain the powers and Functions of Prime Minister.
11. Explain the Directive Principles of the state policy in Indian Constitution.
12. Explain the powers and Functions of Governor.

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE (AUTONOMOUS), (2020-21) VUYYURU**  
**PAPER TITLE : PAPER-V (CORE): INDIAN POLITICAL THOUGHT**

Course Code	POL501C	Course Delivery Method	Class Room
Credits	4	CIA Marks	30
No.of Lecture Hours/Week	5	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction2020-2021	Year of offering 2021-2022	Year of Revision 2021-2022	Percentage of Revision 0%

**Course outcomes :**

**CO1:** *It helps* students discover the political philosophy that forms the basis of politics in the Indian Political Thought , to interpret the political philosophies of the Ancient Indian and Medieval philosophers in historical context as well as relate them to contemporary politics.

**CO2:** Origin of the knowledge in the Indian political thought.

**CO3:** To understand the political thoughts in medieval period and how it laid foundation to modern.

**CO4:** To demonstrate how government politics people by democracy and individual people.

**CO5:** To demonstrate individual freedom and Theory of sarvodaya.

**Learning outcomes:**

On successful completion of the course the students will be able to:

- Understand the fundamental course classical, Indian political phil, basic features of medieval political thought and shift from medieval to modern era.
- Understand the Gandhi and Political Theory and appreciate its implications on the perception of State in terms of its purposes and role.
- Acquaint with the Liberal and M.N Roy human radicalism and Jayaprakash Narayana Political Ideas

- critically analyze the evolution of Indian political thought.

**Unit -I: 15Hrs**

1. Manu: Social laws ,dandaneethi
2. Kautilya : kingship, Mandala Theory, Saptanga Theory

**UNIT – II 15HRS**

1. Gandhi:
  - a.Non-violence, Satyagraha.
  - b.Theory of Trusteeship.
2. JoythiRao Pule: - Social reform

**UNIT – III 15HRS**

Nehru:

- a. Democratic Socialism.
- b.Non-Alignment

Ambedkar:

- a.Views on Indian Society.
- b.Social Movements.

**UNIT – IV 15HRS**

M.N. Roy:

- Radical Humanism

Jaya Prakash Narayan:

- Total Revolution.
- Sarvodaya.

**Text Books**

1. “Rajaneethi Thatvavicharam”: A Text Book by Telugu Academy.

**Reference books:**

1. Pantham Thomas and Kenneth Deutsch(Ed)(1986)  
Political thought in modern India, Sage, New Delhi
2. BidyutChakrabarthy and Rajendra Kumar Pandey (2009) modern Indian political thought, Sage, New Delhi
3. GurpreetMahajan (2013), India : Political ideas and making of a democratic discourse, zed book, London

4. ParthaChatterjee (1986) nationalist thought and the colonial world: A derivative disclosure, zed books, London
5. Bhikhu Parekh (1999) colonialism, tradition and reform,Sage,New Delhi
6. BhikhuParekh(1989) Gandhi's political philosophy ,Macmillan, London.



**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE,  
VUYYURU**

**(AN AUTONOMOUS COLLEGE IN THE JURISDICTION OF KRISHNA  
UNIVERSITY, MACHILIPATNAM, A.P)**

<b>POLITICAL SCIENCE</b>	<b>POL 501C</b>	<b>2020-21</b>	<b>III BA</b>
--------------------------	-----------------	----------------	---------------

**EXAMINATION AT THE END OF FIFTH SEMESTER**

**SEMESTER – V**

**TIME: 3 HRS**

**PAPER – V**

**MAX. MARKS: 70**

**Model Paper**

**Indian Political Thought**

**Section – A**

**I. ANSWER any TWO OF THE FOLLOWING.**

**(2 × 5 = 10)**

- 1) DANDA NEETHI.
- 2) write about Koutilya's Saptanga.
- 3) Explain Gandhi's Theory of Trusteeship
- 4) DR. AMBEDKAR'S ANNIHILATION OF CASTE.

**Section – B**

**Answer any FOUR of the following.**

**(4 × 15 = 60)**

- 5) Explain Manu's classification of Varna.
- 6) Explain the mandala theory of kautilya.
- 7) State and criticize Gandhi's satyagraha and non-violence.
- 8) Write an essay on social movements led by Dr. Ambedkar.
- 9) Write an essay on mahatma Jyothirao Phule
- 10) Discuss Jawaharlal Nehru's views on Democratic Socialism.
- 11) Briefly explain Jaya Prakash Narayan's total revolution
- 12) Write about M.N. Roy's radical humanism

**A.G & S.G SIDDHARTHA DEGREE COLLEGE of Arts & Science**

**VUYYURU-521165**

(An Autonomous college in the Jurisdiction of Krishna University, Machilipatnam)

<b>Political science</b>	<b>POL501C</b>	<b>III B.A</b>
--------------------------	----------------	----------------

**Subject: Indian Political Thought**

**Semester-V**

**Paper-V**

Guidelines to the paper setter

SECTION	Unit-I	Unit-II	Unit-III	Unit-IV
A 5 Marks Questions	2	1	1	
B 15 Marks Questions	2	2	2	2
Weight age	40	35	35	30

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), (2020-21) VUYYURU**

**PAPER TITLE : PAPER-VI (CORE): WESTERN POLITICAL THOUGHT**

Course Code	POL502C	Course Delivery Method	Class Room
Credits	4	CIA Marks	30
No.of Lecture Hours/Week	5	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction2020-2021	Year of offering 2021-2022	Year of Revision 2021-2022	Percentage of Revision 0%

**Course outcomes :**

**CO1:** It helps students discover the political philosophy that forms the basis of politics in the Western world, to interpret the political philosophies of the Greek, Roman , French, English and German philosophers in historical context as well as relate them to contemporary politics.

**CO2:** Origin of the knowledge in political thought.

**CO3:** To understand the political thoughts in medieval period and how it laid foundation to modern.

**CO4:** To demonstrate how government politics people by democracy and individual people.

**CO5:** To demonstrate individual freedom, surplus value, materialist.

**Learning outcomes:**

On successful completion of the course the students will be able to:

- Understand the fundamental contours classical, western political philosophy, basic features of medieval political thought and shift from medieval to modern era.
- UnderstandtheSocialContractTheoryandappreciateitsimplicationsontheperception of State in terms of its purposes and role.
- AcquaintwiththeLiberalandMarxistphilosophyandanalyzesometrends in Western Political Thought.

- Critically analyse the evolution of western political thought.

**Unit-I: Plato:** 15Hrs  
 a. Theory of Justice  
 b. Education System  
 c. Philosopher -King  
 d. Theory of Communism

**Unit-II: Aristotle:** 15Hrs  
 a. Ideal state  
 b. Theory of Revolutions.  
 c. Classification of governments

**Unit-III:** 15Hrs  
 1. Machiavelli-political Ideas, Advice to the Prince  
 2. Thomas Hobbes: Human nature, Social Contract, Sovereignty  
 3. John Locke: Natural Rights and Social Contract,  
 4. Rousseau: Social Contract and General Will

**Unit-IV:** 15Hrs  
 1. **Hegel:** Civil Society, State  
 2. **Karl Marx:** Surplus Value, History of Dialectical Materialism, State

**Reference books:**

1. Shefali Jha (2010) Western Political Thought from Plato to Karl Marx, Pearson, and New Delhi
2. Boucher D and Kelly P (Eds) (2009) Political Thinkers from Socrates to the Present, Oxford University press, oxford
3. Coleman J (2000) A History of Modern Political Thought: From Ancient Greece to early Christianity, Blackwell publishers, oxford
4. Macpherson C B (1962) The Political Theory of Possessiveness Individualism, Oxford University press, oxford
5. Hampsher-monk I (2001) A History of Modern Political Thought: Major Political Thinkers From Hobbers to Marx, Blackwell publishers, oxford

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE, VUYYURU**  
**(AN AUTONOMOUS COLLEGE IN THE JURISDICTION OF KRISHNA**  
**UNIVERSITY, MACHILIPATNAM, A.P)**

POLITICAL SCIENCE	POL 502C	2020-21	III BA
-------------------	----------	---------	--------

**EXAMINATION AT THE END OF FIFTH SEMESTER**

**SEMESTER – V**

**TIME: 3 HRS PAPER**  
**MAX. MARKS: 70**

**Model paper**

**Western political thought**

**Section – A**

**I. Answer any two of the following** **(2 × 5 = 10)**

- 1) Philosopher-king
- 2) What are the views of hobbes on human nature.
- 3) Theory of natural rights
- 4) Examine mark's views on class War

**Section – B**

**II. Answer any Four of the following.** **(4 × 15 = 60)**

- 5) Explain the features of plato's education
- 6) Analyze aristotle's views on revolutions.
- 7) What are qualities of a Prince suggested by Machiavelli?
- 8) Social Contract Theory of Rousseau
- 9) Social Contract Theory of Hobbes
- 10) Explain Plato's Theory of Justice
- 11) Plato system of education
- 12) Karl Marx's Theory of Communism.

**AG & SG SIDDHARTHA DEGREE COLLEGE of Arts & Science**

**VUYYURU-521165**

(An Autonomous college in the Jurisdiction of Krishna University, Machilipatnam)

<b>Political science</b>	<b>POL-502C</b>	<b>IIB.A</b>
--------------------------	-----------------	--------------

**Subject: western Political thought**

**Semester-V**

**Paper-VI**

**Guidelines to the paper setter**

SECTION	Unit-I	Unit-II	Unit-III	Unit-IV
A 5 Marks Questions	1		2	1
B 10 Marks Questions	2	2	3	1
Weight age	35	30	55	20

**Note:** In view of vast syllabus more weightage given to **unit-III**

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF STATISTICS**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**12-11-2021**

**Minutes of the meeting of BOS in Statistics for B.Sc(MSCs) Degree Courses of AG&SGSiddhartha Degree College of Arts & Science, Vuyyuru, held at 3.00 PM on 12- 11-2021.**

*N.V. SrinivasaRao*

*Presiding*

**Members Present:**

- 1) *N.V. Rao*  
(N.V.SrinivasaRao) Chairman Head, Department of Mathematics, AG & SG S Degree College.
- 2) *P. Ravi Kumar*  
(P. Ravi Kumar) University Nominee Department of Statistics, Pavitra Degree College, Machilipatnam.
- 3) *G. Chakravarthy*  
(G. Chakravarthy) Subject Expert Head. Department of Statistics, P. B. Siddhartha College, Vijayawada
- 4) *D. Sunitha*  
(D.Sunitha) Member Lecturer in Mathematics AG & SG S Degree College.
- 5) *A. Bhargavi*  
(A.Bhargavi) Member Lecturer in Mathematics AG & SG S Degree College.
- 6) *Noor Mohammad*  
(Noor Mohammad) Member Lecturer in Mathematics AG & SG S Degree College.
- 7) *K. Rajya Lakshmi*  
(K. Rajya Lakshmi) Member Lecturer in Mathematics AG & SG S Degree College.



### **Agenda of B.O.S Meeting:**

1. To discuss and recommend the Syllabi, Model Question Papers and Guidelines to be followed by question paper setters in Statistics for 1<sup>st</sup>Semester as per the guidelines and instructions under APSCHE prescribed by Krishna University from the Academic Year 2021-22.
2. Discussed and recommended the teaching and evaluation methods for approval of Academic Council
3. Any other matter.

### **Resolutions.**

1. To introduce new Syllabi, Model Question Papers and Guidelines to be followed by the question paper setters in Statistics of 1<sup>st</sup>Semester from the Academic year 2021-22.
2. To recommend the teaching and evaluation methods to be followed under Autonomous status. The maximum marks for IA is 25 and SE is 75. Each IA written examination is of 1 Hr. duration for 15 marks. The tests will be conducted centrally. The average of two such IA is calculated for 15 marks. 5 marks will be allotted basing on Assignment and 5 marks are allotted for activity. There is no minimum passing for IA and there is no provision for improvement in IA. Even though the candidate is absent for two IA exams/obtain zero marks the external marks are considered (if he/ she gets 40 out of 75) and the result shall be declared as 'PASS' from the Academic year 2021-22.
3. Discussed and recommended for organizing seminars, Guest lecturers, Online Examinations and Workshops to upgrade the knowledge of students for Competitive Examinations for the approval of the Academic Council.

**A.G. & S.G. Siddhartha Degree College of Arts & Science**  
Vuyyuru, Krishna District  
**Department of Statistics**  
**Programme Specific Outcomes (PSOs)**

- PSO1 : Apply the concepts, principles and methods of statistics to various fields of study
- PSO2 : Understand the importance and value of statistical principles and convert a problem description into testable research hypotheses
- PSO3 : Select appropriate statistical tools to investigate a research hypothesis.
- PSO4 : Perform data analysis by apply appropriate statistical methodology and interpret result in a variety of settings
- PSO5 : Compute statistical measures using software and programs.

**A. G & S. G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**  
 (An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

<b>STATISTICS</b>	<b>STATIIB</b>	<b>2021-22 Onwards</b>	<b>B.Sc.(MSCs)</b>
-------------------	----------------	------------------------	--------------------

**SEMESTER-1**                                  **PAPER - I**                                  **No of Credits:4**  
**DESCRIPTIVE STATISTICS AND THEORY OF PROBABILITY**

<b>S. No</b>	<b>PROGRAMME OUTCOMES</b>
<b>PO1</b>	Remember the basic concepts of statistics at different levels and to understand them for gaining of knowledge.
<b>PO2</b>	Apply the statistical techniques in the analysis of data and also acquire knowledge in optimization techniques.
<b>PO3</b>	Facilitate students to acquire flair knowledge to estimate the values in real life problems.

#### **COURSE OUTCOMES**

<b>CO.NO</b>	<b>Upon successful completion of this course, students should have the knowledge and skills to:</b>	<b>Mapping</b>
<b>CO1</b>	knowledge of various types of data, their organization and evaluation of summary measures such as non- central and central moments, measures of skewness and kurtosis.	<b>BTL2, PO2</b>
<b>CO2</b>	knowledge to conceptualize the probabilities of events including frequentist and axiomatic approach. simultaneously, they will learn the notion of conditional probability including the concept of Bayes' Theorem,	<b>BTL3, PO2</b>
<b>CO3</b>	knowledge related to concept of discrete and continuous random variables and their probability distributions including expectation and moments,	<b>BTL4, PO2</b>
<b>CO4</b>	knowledge related to concept of generating functions and weak law of large numbers.	<b>BTL4,PO2</b>

**About this Course**

Statistics is an important field of math that is used to analyze, interpret, and predict outcomes from data. Descriptive statistics will teach you the basic concepts used to describe data. This is a great beginner course for those interested in Data Science, Economics, Psychology, Machine Learning, Sports analytics and just about any other field. This paper deals with the situation where there is uncertainty and how to measure that uncertainty by defining the probability.

**A. G & S. G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

<b>STATISTICS</b>	<b>STATIIB</b>	<b>2021-22 Onwards</b>	<b>B.Sc.(MSCs)</b>
-------------------	----------------	------------------------	--------------------

**SEMESTER- I**

**PAPER- I**

**No. of Credits: 4**

**DESCRIPTIVE STATISTICS AND THEORY OF PROBABILITY**

**Unit- I**

**12L**

**Moments:** Central and non-central moments and their inter-relationships, Sheppard's corrections for moments for grouped data. **Skewness:** Definition, measures of skewness by Karl Pearson's, Bowley's formulae and based on moments. **Kurtosis:** Definition, measures of kurtosis based on moments, Simple problems.

**Unit- II**

**12L**

Probability-I: Definitions of various terms - Random experiments, trial, sample space, mutually exclusive, exhaustive, equally likely, favourable and independent events. Definitions- Mathematical, Statistical and Axiomatic definitions of probabilities. Law of addition of probabilities for two events and extension of general law of addition of probabilities. Boole's inequality for n events and real-life problems.

**Unit -III**

**12L**

Probability-II : Conditional Probability-Definition - dependent and independence events, multiplication law of probability for two events, extension of multiplication law of probability. Pairwise independent events and conditions for mutual independence of n events and Baye's theorem and its applications and problems.

**Unit- IV**

**12L**

Random Variables: Univariate Random variables- Definition, Discrete and Continuous random variables - Probability mass function and probability density function with illustrations. Distribution function and its properties. Bivariate random variables- Definition, Discrete and Continuous bi-variate random variables- joint, marginal and conditional distributions- its properties. Distribution functions of the bivariate random variables and its properties. Independence of random variables, and simple problems.

**UnitV:**

**12L**

Mathematical Expectations: Definition, Mathematical expectation of function of a random variable, Properties of Expectations - Addition and Multiplication theorems of expectation. Properties of Variance and Covariance. Cauchy-Schwartz Inequality. Generating Functions- Definition of moment generating function (m.g.f), Cumulant generating function (c.g.f), Probability generating function (p.g.f) and Characteristic function (c.f) and statements of their properties with applications. Chebyshev's inequality and its applications. Statement of Weak Law of Large Numbers for identically and independently distributed (i.i.d) random variables with finite variance.

**Text Book:** Fundamentals of Mathematical Statistics, 12th Edition, 10<sup>th</sup> September 2020,

S. C. Gupta and V. K. Kapoor, Sultan Chand & Sons, New Delhi.

**Recommended References books:**

1. B.A/B.Sc. First Year Statistics(2010), Telugu Academy, Hyderabad.
2. Mathematical Statistics with Applications, 2009, K.M.Ramachandran and Chris P.Tsokos Academic Press(Elsevier), Haryana.
3. Probability and Statistics, Volume I, D.Biswas, New central book Agency (P) Ltd, New Delhi.
4. An outline of Statistical theory, Volume Two, 3rd Edition, 2010 (with corrections) A.M.Goon, M.K. Gupta, B.Dasgupta, The World Press Pvt.Ltd., Kolkata.
5. Sanjay Arora and Bansilal: New Mathematical Statistics, SatyaPrakashan, New Delhi.

**Websites of Interest:**

<http://onlinestatbook.com/rvls/index.html>

**Co-Curricular Activities in the class:**

1. Pictionary
2. Case Studies on topics in field of statistics
3. Snap test and Open Book test
4. Architectural - To be build the procedures
5. Extempore - Random concept to students
6. Interactive Sessions
7. Teaching through real world examples

**Model Paper Structure**

**Section A:** Answer FIVE questions out of EIGHT questions (5 x SM= 25 M)

**Section B:** Answer FIVE questions out of FIVE questions with internal choice .(5 x 10M = SOM)

\*\*\*

**A. G & S. G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

**STATISTICS**

**STAT11B**

**2021-22 Onwards**

**B.Sc.(MSCs)**

**Model Paper**

**Section-A**

**Answer any FIVE of the following**

**5 x 5 = 25Marks**

1. Show that for discrete distributions  $\beta_1 > 1$  **(L-2, C0-1)**
2. State and prove addition theorem of probability for two events **(L-1, C0-2)**
3. If A and B are independent events, then prove that **(L-3, C0-2)**  
*i)  $\bar{A}$  and  $B$  ii)  $\bar{A}$  and  $\bar{B}$*  are also independent
4. Define the "distribution function" (or cumulative distribution function) of a random variable and state its essential properties. **(L-2, C0-3)**
5. Explain the concepts marginal and conditional probability distributions. **(L-2, C0-3)**
6. Show that the mathematical expectation of the sum of two random variables is the sum of their individual expectations. **(L-3, C0-3)**
7. Define moment generating function (m.g.f.) of a random variable X. If  $M_X(t)$  is the m.g.f. of a random variable X about the origin, show that the moment  $\mu'_r$  is given by **(L-1, C0-4)**  
$$\mu'_r = \left[ \frac{d^r}{dt^r} M_X(t) \right]_{t=0}$$
8. Explain the concept of "weak law of large numbers". **(L-2, C0-4)**

**Section- B**

**Answer ALL the questions**

**5 x 10 = 50 Marks**

9. A) Define moments. Establish the relationship between the moments about mean, (Central moments) in terms of moments about any arbitrary point and vice versa. **(L-3, C0-1)**  
**(OR)**  
B) The scores in Statistics of 250 candidates appearing at an examination have Mean= 39.72, variance= 97.80, 3<sup>rd</sup> central moment and fourth central moments are -114.18 and 28,396.14. It was later found on scrutiny that the score 61 of a candidate has been wrongly recorded as 51. Make necessary corrections in the given values of the mean and the central moments. **(L-3, C0-1)**

10. A) State and Prove Boole's inequality. (L-1, C0-2)  
**(OR)**

B) For two events A and B, prove that (L-1, C0-2)

- (i)  $P(A \cap B) = P(B) - P(A \setminus B)$       (ii)  $P(A \cap B) = P(A) - P(A \setminus B)$   
 (iii) if  $B \subseteq A$  then  $P(A \cap B) = P(A) - P(B)$  (iv) If  $A \subseteq B$  then  $P(A \cap B) = P(A)$

11. A) It is 8:5 against the wife who is 40 years old living till she is 70 and 4:3 against her husband now 50 living till he is 80. Find the probability that  
 (i) Both will be alive,      (ii) None will be alive,  
 (iii) Only wife will be alive,      (iv) Only husband will be alive,  
 (v) Only one will be alive,      (vi) At least one will be alive. (L-3, C0-2)

**(OR)**

B) A and B are two weak students of statistics and their chances of solving a problem in statistics correctly are 1/6 and 1/8 respectively. If the probability of their making a common error is 1/525 and they obtain the same answer, find the probability that their answer is correct. (L-3, C0-2)

12. A) Let X be a random variable with cumulative distribution function

$$F(x) = \begin{cases} 0, & \text{if } x < 0, \\ \frac{x^2 + 2}{4}, & \text{if } 0 \leq x < \frac{1}{2}, \\ \frac{x+1}{2}, & \text{if } \frac{1}{2} \leq x < \frac{3}{4}, \\ \frac{x+1}{2}, & \text{if } \frac{3}{4} \leq x < 1, \\ 1, & \text{if } x \geq 1 \end{cases}$$

Find

- (i)  $P(0 \leq X < 1/4)$  (ii)  $P(0 < X \leq 1/4)$  (iii)  $P(0 \leq X \leq 1/4)$   
 (iv)  $P(0 < X < \frac{1}{2})$  (v)  $P(X = 3/4)$  (L-5, C0-3)

**(OR)**

B) Two discrete random variables X and Y have the joint probability density function:  $p(x, y) = \frac{Axe^{-x} p^y (1-p)^{x-y}}{y!(x-y)!}$ ,  $y = 0, 1, 2, \dots$ ;  $x = 0, 1, 2, \dots$

Where A, p, > 0 & 0 < p < 1 are constants.

Find (i) The marginal probability density functions of X and Y.

(ii) The conditional distribution of Y for a given X and of X for a given Y.

**(L-5, C0-3)**

13. A) Explain the variance of a Linear Combination of Random Variables. (L-2, C0-4)

**(OR)**

B) (i) Define characteristic function of random variables and state its properties.

(ii) State and Prove Chebychev's inequality. (L-2, C0-4)



\*\*\*

**A. G & S. G Siddhartha Degree College of Arts and Science (Autonomous), Vuyyuru**  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam)

<b>STATISTICS</b>	<b>STATIIB</b>	<b>2021-22 Onwards</b>	<b>B.Sc.(MSCs)</b>
-------------------	----------------	------------------------	--------------------

**SEMESTER-I**

**Practical - I: Descriptive Statistics**

**No of Credits: 1**

<b>CO.NO</b>	<b>Upon successful completion of this course, students should have the knowledge and skills to:</b>	<b>Mapping</b>
<b>CO1</b>	draw the suitable diagram and graphs of the given sample data	<b>P02</b>
<b>CO2</b>	Analyze the uni-variate data using statistical techniques.	<b>P02</b>

**List of Practicals**

1. Diagrams & Graphs- Bar, Pie , Histogram, frequency polygon, and Ogive curves
2. Computation of measures of central tendency- Arithmetic Mean, Geometric mean and Harmonic Mean - Grouped Data.
3. Computation of measures of central tendency- Median, Mode and Partition Values - Grouped Data.
4. Computation of measures of Dispersion - Quartile Deviation, Mean Deviation, Standard Deviation, Variance and Coefficient of Variation - Grouped Data.
5. Computation of non-central, central moments,  $\mu_1$  and  $\mu_2$  and Sheppard's corrections for grouped data.
6. Computation of central moments,  $\mu_1$  and  $\mu_2$  and Sheppard's corrections when non -central moments are given.
7. Computation of Karl Pearson's coefficients, Bowley's coefficients of Skewness and coefficients of skewness based on moments - Grouped Data

**Note: Training shall be on establishing formulae in Excel cells and derive the results. The excel output shall be exported to MS word for writing inference.**

**Reference Books**

1. Practical Manual -Prepared by the Department Faculty Members
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI

**Websites of Interest:** <http://www.statsci.org/datasets.html>

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF TELUGU  
MINUTES OF BOARD OF STUDIES  
ODD SEMESTER**

**30-10-2021**

తెలుగు విభాగం పాఠ్య నిర్ణాయక మండలి ( బోర్డు ఆఫ్ స్టడీస్) సమావేశం - 12

తేది.30-10-2021 ఉదయం 10 గంటలకు అడుసుమిల్లి గోపాలకృష్ణయ్య చెఱకు రైతుల సీడ్డార్థ డిగ్రీ కళాశాల ఉయ్యూరు, తెలుగు శాఖలో 2021 - 2022 విద్యా సంవత్సరానికి తెలుగు శాఖ అధ్యక్షురాలు శ్రీమతి ఎమ్.ఎల్.యస్. కుమారి అధ్యక్షతన సమావేశం నిర్వహించటం జరిగినది.

తెలుగు పాఠ్యాంశ నిర్ణాయక మండలి సమావేశానికి చర్చనీయాంశాలు.

1. 2021-2022 విద్యా సంవత్సరంలో ప్రథమ,ద్వితీయ బి.ఎ., బి.కాం., బి.ఎస్.సి తరగతులకు మొదటి, మూడవ సెమిస్టర్లకు సంబంధించిన పాఠ్యాంశాల నిర్ణయం గురించి.
2. తెలుగు శాఖ ఆధ్వర్యంలో జర్నలిజం సర్టిఫికేట్ కోర్సు నిర్వహించడం గురించి.
3. అధ్యక్షురాలు అనుమతితో ఇతర అంశాలు ఏమైనా.....

తీర్మానాలు:

తేది.30-10-2021 ఉదయం 10 గంటలకు అడుసుమిల్లి గోపాలకృష్ణయ్య చెఱకు రైతుల సీడ్డార్థ డిగ్రీ కళాశాల ఉయ్యూరులో 2021 -2022 విద్యా సంవత్సరానికి రెండవ భాషగా తెలుగు పాఠ్యాంశాలు నిర్ణయించిన తరువాత తెలుగు పాఠ్య నిర్ణాయక మండలి (బోర్డు ఆఫ్ స్టడీస్) సభ్యులు ఈ క్రింది తీర్మానాలను ఏకగ్రీవంగా ఆమోదించడమైనది.

1. 2021 -2022 విద్యా సంవత్సరం ప్రథమ బి.ఎ., బి.కాం., బి.ఎస్.సి తరగతులకి మొదటి సెమిస్టర్ సెలబ్షన్ లో ఉన్న 'పలనాటి బెబ్బులి' అనే పాఠాన్ని తీసివేసి దానికి బదులుగా 'మధుర స్నేహం' అనే పాఠాన్ని చేర్చాలని తీర్మానించడమైనది.
2. మూడవ సెమిస్టర్ ఆంధ్ర ప్రదేశ్ స్టేట్ కౌన్సిల్ ఆఫ్ హైయ్యర్ ఎడ్యుకేషన్ (APSCHE) వారు పెట్టిన సెలబ్షన్ ని యథాతథంగా కొనసాగించాలని తీర్మానించడమైనది.
3. 2021 -2022 విద్యా సంవత్సరం ప్రథమ బి.ఎ., బి.కాం., బి.ఎస్.సి ప్రశ్న పత్రం ఎక్స్ టర్నల్ 75 మార్కులకు, ఇంటర్నల్ 25 మార్కులకు ఇవ్వాలని, ద్వితీయ బిఎ., బి.కాం., బి.ఎస్.సి మూడవ సెమిస్టరుకు ప్రశ్న పత్రం ఎక్స్ టర్నల్ 70 మార్కులకు, ఇంటర్నల్ 30 మార్కులకు ఇవ్వాలని తీర్మానించడమైనది.
4. 2021 -2022 విద్యా సంవత్సరం ప్రథమ, ద్వితీయ బిఎ.,బి.కాం., బిఎస్ సి విద్యార్థులకు కనీస పాస్ మార్కులు లేవని తీర్మానించడమైనది.
5. తెలుగు శాఖ ఆధ్వర్యంలో జర్నలిజం సర్టిఫికేట్ కోర్సు నిర్వహించాలని తీర్మానించడమైనది.

హాజరైన సభ్యులు:-

1. శ్రీమతి ఎమ్.ఎల్.యస్ కుమారి M.L.S. Kumari  
తెలుగు శాఖ అధ్యక్షురాలు, పాఠ్య నిర్ణాయక మండలి అధ్యక్షులు.

2. శ్రీమతి ఎమ్. రమాదేవి M. Rama Devi  
తెలుగు అధ్యాపకురాలు

3. శ్రీమతి బి.ఎస్.ఎల్ పద్మశ్రీ B.S.L. Padma Sri  
తెలుగు శాఖ అధ్యక్షురాలు,  
ఎస్.పి మహిళా కళాశాల,  
మచిలీపట్నం.  
(కృష్ణా విశ్వవిద్యాలయం నామిని)

4. డా॥ వై. పూర్ణచంద్ర రావు  
తెలుగు శాఖ అధ్యక్షులు  
అ.ప్రో,  
పి.బి సిద్ధార్థ కళాశాల,  
విజయవాడ - 10  
విషయ నిపుణులు (Subject Expert)

6. డా॥ జి. శ్రీనివాస్, G. Sri - n  
తెలుగు శాఖ అధ్యక్షులు,  
ప్రభుత్వ డిగ్రీ కళాశాల,  
చింతలపూడి.  
విషయ నిపుణులు (Subject Expert)

7. కుమారి పి. కాశీ విశ్వేశ్వరి P. Kasi Vishweswari  
విద్యార్థి ప్రతినిధి.

TELUGU	TELTIA	2021-2022	IB.A.,B.COM.,B.SC
--------	--------	-----------	-------------------

**I SEMESTER – SYLLABUS**  
**TELUGU - I**

యూనిట్ - I

రాజనీతి - నన్నయ

మహా భారతం - సభాపర్వం - ప్రథమాశ్వాసలో 26వ పద్యము “మీవంకమున - నీవు వారిదైన నేర్పెటింగి” నుండి 57వ పద్యము “నాయథాకక్తి .....వాని ననుష్ఠితు బ్రియముతోడ” వరకు.

యూనిట్ - II

దక్షయజ్ఞం - నన్నెచోడుడు

కుమార సంభవం - ద్వితీయాశ్వాసలో 49వ వచనం “అంతకమున్ను.....భయంకరా కారంబుదాల్పిన” నుండి 86వ పద్యం “ప్రమధగణము.....కనిరిశంభు” వరకు.

యూనిట్ - III

ధౌమ్యధర్మోపదేశము - తిక్కన

మహాభారతము - విరాటపర్వము - ప్రథమాశ్వాసలో 116వ పద్యం “ఎఱిగెడు వారికినైనను.... వలయు దగియెడు బుద్ధుల్” నుండి 146వ పద్యం “అతడు నియతితోడ....సంచయములు దగ జపించుచుండె” వరకు

యూనిట్ - IV

మదుర స్నేహం - పోతన

ఆంధ్రమహాభాగవతము - దశమస్కంధము - కుచేలోపాఖ్యానంలో 962వ పద్యం “లలిత పతివ్రతా తిలకంబు.....కుపాయమూహింప వైతి” నుండి 983వ పద్యం “తన మృదుతల్పమందు....ధరణీసురు డెంచటి భాగ్యవంతుడో” వరకు.

యూనిట్ - V

సీతారావణ సంవాదం - మెల్ల

రామాయణము - సుందరకాండములో 40వ వచనం “ఆరామంజుచి....వృక్షం బారోహించి యండు” నుండి 87వ పద్యం “కావున నిక్కోమలియెడ....మనకు దిక్కగు మీదన” వరకు.

వ్యాకరణము :-

1. సంధులు :- సవర్ణ, గుణ, యణాదేశ,వృద్ధి, అకార,ఇకార,ఉకార,త్రికనంధులు

2. సమాసములు :- తత్పురుష, కర్మధారయ, ద్వంద్వ, ద్విగు, బహువ్రీహి సమాసములు.

3. ధండస్సు :- వృత్త పద్యాలలో ఉత్పలమాల,చంపకమాల,శార్దూలము, మత్తేభము.

జాతులు, ఉపజాతుల్లో కందము, తేటగీతి, ఆటవెలది మరియు ముత్యాలసరాలు.

4. అలంకారములు :- శబ్దాలంకారాల్లో అనుప్రాసలైన వృత్త్యనుప్రాస, చేకానుప్రాస,లాటానుప్రాస, అంత్యానుప్రాసములు.

అర్థాలంకారాల్లో ఉపమ,ఉత్పేక్ష,రూపక శ్లేషలు.

ఆధార గ్రంథాలు:

1. శ్రీ మదాంధ్ర మహాభారతము - సభా పర్వము - తిరుమల తిరుపతి దేవస్థానం ప్రచురణ.
2. శ్రీ మదాంధ్ర మహాభారతము - విరాట పర్వము - తిరుమల తిరుపతి దేవస్థానం ప్రచురణ.
3. కుమార సంభవం - నన్నె చోడుడు.
4. శ్రీ మహాభాగవతము - పోతన
5. రామాయణము - మెల్ల.

TELUGU	TELTIIA	2021 - 2022	I B.A., B.Com., B.Sc.
I SEMESTER - MODEL PAPER			

ప్రాచీన కవిత్వం , ఆధునిక కవిత్వం, కథానికలు, వ్యాకరణం

పార్టు - ఎ

1. ఈ క్రింది వానిలో ఒక దానికి ప్రతి పదార్థ తాత్పర్యమును వ్రాయండి.

7మా

ఎ. బహుధనధాన్య సంగ్రహము బాణశరాసన యోధవీర సం  
గ్రహము నిరంతరాంతరుదకంబులు ఘోసరసేంద్రనౌఘ సం  
గ్రహము ననేక యంత్రములు గల్గి యసాధ్యములై ద్విషద్యయా  
వహు లగుచుండ నొప్పునె భవత్పరి రక్ష్యములైన దుర్గముల్.

లేదా

బి. కలలోనందను మున్నెఱుంగని మహా కష్టాత్ముడై నట్టి దు  
ర్బలు డాపత్సమయంబునన్ నిజ పదాబ్జాతంబులు ల్లంబులోన్  
దలపన్నంతనె మెచ్చి యార్త హరుడై తనైనన నిచ్చున్ సు ని  
శ్చల భక్తిన్ భజియించువారి కిడడే సంపద్విశేషోన్నతుల్.

II. క్రింది వానిలో మూడింటికి సందర్భసహిత వ్యాఖ్యలు వ్రాయండి.

3 X 4 = 12మా

1. వార్త నిర్వహింపవలయు బతికి.
2. నన్ను బనుపు దక్షు బట్టి తెచ్చెదన్
3. పురుషార్థంబునకు హాని పుట్టుక యున్నే?
4. గోవింద దర్శనోత్సాహి యగుచు.
5. ఉండుటిది న్యాయమే లతాంగీ!

III. క్రింది వానిలో మూడింటికి సంగ్రహరూప సమాధానాలు వ్రాయండి.

3 X 4 = 12మా

1. రాజు చేయకూడని పనుల్ని తెల్పండి ?
2. ప్రమథులు దక్షుని బంధించిన తీరును తెల్పండి ?
3. దౌమ్మ్యుని ఉపదేశానంతరం ఏమి జరిగింది ?
4. అంతఃపురకాంతలు కుచేలుని గూర్చి భావించిన విషయాల్ని తెల్పండి ?
5. త్రిజట తన స్వప్నాన్ని ఏమని వివరించెను ?

IV. క్రింది వానిలో మూడింటికి వ్యాసరూప సమాధానాలు వ్రాయండి.

3 X 8 = 24మా

1. ప్రజా పాలనలో రాజులు పాటించాల్సిన ధర్మాల్లేవి
2. దక్షయజ్ఞం సారాంశాన్ని వ్రాయండి.
3. దొమ్ముడు పాండవులకు చేసిన ధర్మోపదేశాన్ని వివరించండి.
4. మధురస్నేహం పాఠ్య సారాంశాన్ని తెల్పండి.
5. సీతారావణ సంవాదాన్ని వివరించండి.

V. క్రింది వానిలో మూడింటిని విడదీసి, సంధి కార్యము వ్రాయండి.

3 X 2 = 6మా

1. శత్రైకవృద్ధి
2. జగమెల్ల
3. మనుజేంద్రుడు
4. కష్టాత్ముడు
5. ఇక్కోమల్లి

VI. క్రింది వానిలో మూడింటికి విగ్రహ వాక్యాలు వ్రాసి, సమాస నామములు తెల్పండి

3 X 2 = 6మా

1. అష్టాంగాలు
2. ఆశ్రమము
3. భీమార్జునులు
4. మధురస్నేహం
5. తోయజాక్షి

VII. క్రింది పద్య పాదాన్ని గణ విభజన చేసి, యతిని గుర్తించి ఏ పద్య పాదమో తెల్పండి

1 x 4 = 4మా

తన మృదుతల్పమందు వనితామణియైన రమాలలామ పొం

లేదా

క్రింది వానిలో ఒక దానికి లక్ష్య, లక్షణ సమన్వయం చేయండి

1. తేటగీతి
2. ముత్యాలసరాలు
3. ఆటవెలది

VIII. క్రింది పద్యంలోని అలంకారమును గుర్తించి, లక్ష్య లక్షణ సమన్వయం చేయండి.

1 x 4 = 4మా

'బాల సఖుడైన యప్పద్మ పత్రనేత్ర

గాన నేగి దరిద్రాంధకార మగు

లయిన మము నుద్ధరింపుము హరి కృపాక

టాక రవిదీప్తి వడసి మహాత్మ! నీవు.

లేదా

క్రింది వానిలో ఒకదానికి లక్ష్య లక్షణ సమన్వయం చేయండి.

1. వృత్త్యాను ప్రాసము
2. ఉపమాలంకారము



ACCREDITED AT 'A' NACC  
I Year B.A., B.Com., B.SC.,  
Telugu I SEMESTER  
Guidelines to paper Setters

ప్రశ్న పత్ర నిర్మాణ సూచిక

TELUGU - I

1. ప్రతి పదార్థ పద్యాలు:	2-1	1x7 = 7మా	2. సందర్భ సహిత వ్యాఖ్యలు:	5-3	3x4 = 12మా
3. సంగ్రహ రూప ప్రశ్నలు:	5-3	3x4 = 12మా	4. వ్యాస రూప ప్రశ్నలు:	5-3	3x8 = 24మా
5. సంధులు:	5-3	3x2 = 6మా	6. సమాసములు:	5-3	3x2 = 6మా
7. ఛందస్సు:	2-1	1x4 = 4మా	8. అలంకారములు:	2-1	1x4 = 4మా
					మొత్తం = 75 మా

గమనికలు - సూచనలు

1. ప్రతి పదార్థ పద్యాలు:- " రాజనీతి, ధోమ్య ధర్మోపదేశం, మధుర స్నేహం" అనే మూడు పాఠాల నుండి రెండు పద్యాలు ఇవ్వాలి. అవి కూడా ఈ క్రింది పద్యాలలో నుండి రెండు ఇవ్వాలి.

రాజనీతి:

1. ఉత్తమ మధ్యనాథమ.....కాలము దప్పకుండగన్.
2. బహు ధనధాన్య సంగ్రహము.....భవత్పరి రక్ష్యములైన దుర్గముల్.

ధోమ్య ధర్మోపదేశము:

3. రాజ గృహంబు కంటె.....దగదట్లు సేయగన్.
4. ధరణిపు చక్క..... న్గుండుట నీతి కొలువునన్.

మధుర స్నేహం:

5. కలలోనందను.....సంపద్విశేషోన్నతుల్.
6. కనిడాయంజనునంత.....విలోలుండై దిగెన్ తల్పమున్.

2. సందర్భ సహిత వ్యాఖ్యలు:- " రాజనీతి, దక్షయజ్ఞం, ధోమ్య ధర్మోపదేశం, మధుర స్నేహం, సీతారావణ సంవాదం" అనే ఐదు పాఠాల నుండి ఒక్కొక్కటి చొప్పున ఒక్కో పాఠము నుండి ఒక సందర్భ సహిత వ్యాఖ్య ఇవ్వాలి.

3. సంగ్రహ రూప ప్రశ్నలు:- " రాజనీతి, దక్షయజ్ఞం, ధోమ్య ధర్మోపదేశం, మధుర స్నేహం, సీతారావణ సంవాదం" అనే ఐదు పాఠాల నుండి ఒక్కొక్కటి చొప్పున ఒక్కో పాఠము నుండి సంగ్రహ రూప ప్రశ్న ఇవ్వాలి.

4. వ్యాస రూప ప్రశ్నలు:- "రాజనీతి దక్షయజ్ఞం, ధోమ్య ధర్మోపదేశం, మధుర స్నేహం, సీతారావణ సంవాదం" అనే ఐదు పాఠాల నుండి ఒక్కొక్కటి చొప్పున ఒక్కో పాఠం నుండి వ్యాస రూప ప్రశ్న ఇవ్వాలి.

5. సంధులు:- "సవర్ణ, గుణ, యణాదేశ, వృద్ధి, అకార, ఇకార, ఉకార, త్రిక సందు" ల నుండి ఐదు సంధులు ఇవ్వాలి.

6. సమాసములు:- "తత్పురుష, కర్మధారయ, ద్వంద్వ, ద్వగు, బహువ్రీహి సమాసము" ల నుండి ఐదు సమాసములు ఇవ్వాలి.

7. ఛందస్సు:- వృత్తపద్యాలైన " ఉత్పలమాల, చంపకమాల, శార్దూలము, మత్తేభము" ల నుండి ఒక పద్యపాదమును ఇవ్వాలి. జాతులు, ఉపజాతుల పద్యాలైన "కందము, తేటగీతి, ఆటవెలది" మరియు 'ముత్యాలసరాలు' నుండి ఏదైనా మూడిచ్చి ఒకదానిని లక్ష్యలక్షణ సమన్వయం చేయమనాలి.

8. అలంకారములు:- అర్థాలంకారాలైన "ఉపమ, ఉత్పేక్ష, రూపకము, శ్లేష" ల నుండి ఒక అలంకారము ఇవ్వాలి. అది కూడా ఐదు పాఠాల (రాజనీతి, దక్షయజ్ఞం, ధోమ్యధర్మోపదేశము, మధురస్నేహం, సీతారావణ సంవాదం) నుండి ఒక పద్యాన్ని ఇవ్వాలి.

కట్టాలంకారాల నుండి "వృత్త్యనుప్రాస, ఛేకానుప్రాస, లాటానుప్రాస, అంత్యానుప్రాస" ల నుండి రెండు అలంకారములను ఇచ్చి, ఒక అలంకారము వ్రాయమనాలి.

ఇక నమూనా ప్రశ్నపత్రాన్ని పరిశీలించి తరువాత ప్రశ్నపత్రాన్ని తయారు చేసుకోవాలి.

యూనిట్ - 1: వ్యక్తికరణ నైపుణ్యాలు

1. భాష - ప్రాథమికాంశాలు: భాష నిర్వచనం, లక్షణాలు, ఆవశ్యకత, ప్రయోజనాలు.
2. వర్ణం - పదం-వాక్యం: వాక్య లక్షణాలు, సామాన్య, సంయుక్త, సంశ్లేష్ట వాక్యాలు.
3. భాష నిర్మాణంలో 'వర్ణం-పదం-వాక్యం' ప్రాధాన్యత.

యూనిట్ -II : సృజనాత్మక రచన

4. కవితా రచన : ఉత్తమ కవిత - లక్షణాలు
5. కథారచన : ఉత్తమ కథ - లక్షణాలు
6. వ్యాస రచన : ఉత్తమ వ్యాసం - లక్షణాలు

యూనిట్ - III : అనువాద రచన

7. అనువాదం - నిర్వచనం, అనువాద పద్ధతులు.
8. అనువాద సమస్యలు - భౌగోళిక, భాషా, సాంస్కృతిక సమస్యలు, పరిష్కారాలు.
9. అభ్యాసము : ఆంగ్లం నుండి తెలుగుకు అనువదించడం.

యూనిట్ - IV : మాధ్యమాలకు రచన - 1 (ముద్రణా మాధ్యమం/ప్రింటు మీడియా)

10. ముద్రణా మాధ్యమం (అచ్చు మాధ్యమం): పరిచయం, పరిధి, వికాసం.
11. వివిధ రకాల పత్రికలు - పరిశీలన, పత్రికాభాష, శైలి, వైవిధ్యం.
12. పత్రికా రచన : వార్తా రచన, సంపాదకీయాలు, సమీక్షలు - అవగాహన.

యూనిట్ - V : మాధ్యమాలకు రచన - 2 (ప్రసార మాధ్యమం/ఎలక్ట్రానిక్ మీడియా)

13. ప్రసార మాధ్యమాలు : నిర్వచనం, రకాలు, విస్తృతి, ప్రయోజనాలు
14. శ్రవణ మాధ్యమాలు - రచన : రేడియో రచన, ప్రసంగాలు, నాటికలు, ప్రసార సమాచారం.
15. దృశ్య మాధ్యమాలు - రచన : వ్యాఖ్యానం ( యాంకరింగ్), టెలివిజన్ రచన

ఊూనిట్ – 1: వ్యక్తీకరణ నైపుణ్యాలు

1. భాష – ప్రాధమికాంశాలు: భాష నిర్వచనం, లక్షణాలు, ఆవశ్యకత, ప్రయోజనాలు.
2. వర్ణం – పదం-వాక్యం: వాక్య లక్షణాలు, సామాన్య, సంయుక్త, సంశ్లేష్ట వాక్యాలు.
3. భాష నిర్మాణంలో 'వర్ణం-పదం-వాక్యం' ప్రాధాన్యత.

ఊూనిట్ –II : సృజనాత్మక రచన

4. కవితా రచన : ఉత్తమ కవిత – లక్షణాలు
5. కథారచన : ఉత్తమ కథ – లక్షణాలు
6. వ్యాస రచన : ఉత్తమ వ్యాసం – లక్షణాలు

ఊూనిట్ – III : అనువాద రచన

7. అనువాదం – నిర్వచనం, అనువాద పద్ధతులు.
8. అనువాద సమస్యలు – భాగోళిక, భాషా, సాంస్కృతిక సమస్యలు, పరిష్కారాలు.
9. అభ్యాసము : ఆంగ్లం నుండి తెలుగుకు అనువదించడం.

ఊూనిట్ – IV : మాధ్యమాలకు రచన – 1 (ముద్రణా మాధ్యమం/ప్రింటు మీడియా)

10. ముద్రణా మాధ్యమం (అచ్చు మాధ్యమం): పరిచయం, పరిధి, వికాసం.
11. వివిధ రకాల పత్రికలు – పరిశీలన, పత్రికాభాష, శైలి, వైవిధ్యం.
12. పత్రికా రచన : వార్తా రచన, సంపాదకీయాలు, సమీక్షలు – అవగాహన.

ఊూనిట్ – V : మాధ్యమాలకు రచన – 2 (ప్రసార మాధ్యమం/ఎలక్ట్రానిక్ మీడియా)

13. ప్రసార మాధ్యమాలు : నిర్వచనం, రకాలు, విస్తృతి, ప్రయోజనాలు
14. శ్రవణ మాధ్యమాలు – రచన : రేడియో రచన, ప్రసంగాలు, నాటికలు, ప్రసార సమాచారం.
15. దృశ్య మాధ్యమాలు – రచన : వ్యాఖ్యానం ( యాంకరింగ్), టెలివిజన్ రచన

మాదిరి ప్రశ్నాపత్రం

పార్ట్ - ఎ

క్రింది వానిలో ఐదింటికి సంక్షిప్త సమాధానాలు రాయండి.

5 X 4 = 20మా

1. భాష - ప్రయోజనాలు
2. వాక్యం-లక్షణాలు
3. టెలివిజన్ రచన
4. రేడియో రచన
5. ఉత్తమ వ్యాసం-లక్షణాలు
6. సంశ్లేష్ట వాక్యం
7. సంపాదకీయాలు
8. మాండలికాలు
9. వార్తా రచన
10. క్రింది అంశాన్ని తెలుగులోకి అనువదించి రాయండి.

To many, Indian thought, Indian manners, Indian customs, Indian philosophy, Indian Literature are repulsive at the first site; but let them preserve, let them read, let them become familiar with the great principles underlying these Ideas, and it is ninety – nine to one that the charm will come over them, and fascination will be the result. Slow and silent, as the gentle dew that falls in the morning, un seen and unheard yet producing, a most tremendous result, has been the work of the calm, patient, all suffering spiritual race upon the old of thought.

పార్ట్ - బి

క్రింది వానిలో ఐదు ప్రశ్నలకు వ్యాసరూప సమాధానాలు రాయండి.

5 X 10 = 50మా

11. భాషా నిర్మాణంలో వర్ణం, పదం, వాక్యాల ప్రాధాన్యతను వివరించండి.
12. భాషను నిర్వచించి, లక్షణాలు రాసి, ప్రామాణిక భాషను పరిచయం చేయండి.
13. ఉత్తమ కవితా లక్షణాలను విశ్లేషించండి.
14. ఉత్తమ కథా లక్షణాలను వివరించండి.
15. అనువాద సమస్యలను, వ్యాటి పరిష్కారాలను గూర్చి రాయండి.
16. అనువాద లక్షణాలను వివరిస్తూ అనువాద పద్ధతులను గూర్చి రాయండి.
17. ముద్రణా మాధ్యమాన్ని పరిచయం చేస్తూ దాని పరిధి, వికాసాలను వివరించండి.
18. పత్రికా రచనను గురించి విశ్లేషణాత్మక వ్యాసం రాయండి.
19. ప్రసార మాధ్యమాల విస్తృతి, ప్రయోజనాలను సమీక్షించండి.
20. యాంకరింగ్ నిర్వహణ తీరు తెన్నులను వివరించండి.

A.G & S.G. Siddhartha Degree College Of Arts & Science  
Vuyyuru – 521 165, Krishna Dist.  
(An Autonomous College in the jurisdiction of Krishna University, Machilipatnam, A.P.,India)  
ACCREDITED AT 'A' NACC  
I Year B.A., B.Com., B.SC.,  
Telugu III SEMESTER  
Guidelines to paper Setters

పార్ట్ - ఎ

1వ ప్రశ్నలో సంక్షిప్త సమాధానాలు :

యూనిట్ - 1 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 2 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 3 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 4 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 5 నుండి రెండు ప్రశ్నలు  
మొత్తం 10 ప్రశ్నలు ఇవ్వవలెను.

పార్ట్ - బి

2వ ప్రశ్నలో పెద్ద సమాధానాలు :

యూనిట్ - 1 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 2 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 3 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 4 నుండి రెండు ప్రశ్నలు  
యూనిట్ - 5 నుండి రెండు ప్రశ్నలు  
మొత్తం 10 ప్రశ్నలు ఇవ్వవలెను.

-----\*-----

**A.G & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
VUYYURU-521165, KRISHNA Dt., A.P. (Autonomous)**

**Accredited by NAAC with "A" Grade**



**DEPARTMENT OF ZOOLOGY  
MINUTES OF BOARD OF STUDIES  
ODD SEMESTER  
01-11-2021**

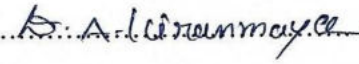
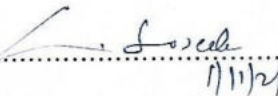
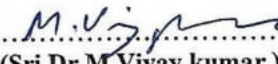
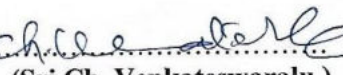
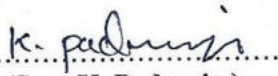
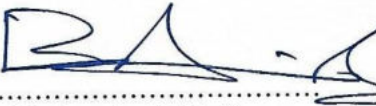



Minutes of the meeting of Board of studies in Zoology for the Autonomous courses of AG & SG Siddhartha Degree College of Arts & Science, Vuyyuru, held at 2:30 pm on 01-11-2021 in the Department of Zoology.

Smt.D.A. Kiranmayee. ...

Presiding

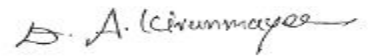
Members Present:

- 1)  Chair person Head, Department of Zoology,  
(Smt. D.A.Kiranmayee.) A.G&S.G.S Degree College of  
Vuyyuru-521165.
- 2)  University Nominee Bio Sciences & Bio technology  
(Smt. Dr.L.Suseela.) Krishna University  
Machilipatnam.
- 3)  Academic Council Head,Department of Zoology,  
(Sri Dr.M.Vijay kumar.) Nominee SRR & CVR Govt. Degree College,  
Vijayawada.
- 4)  Academic Council Head, Department of Zoology,  
(Sri Ch. Venkateswaralu.) Nomine P.B. Siddhartha College,  
Vijayawada.
- 5)  Member Lecturer in Zoology,  
(Smt. K. Padmaja.) A.G&S.G.S Degree College  
Vuyyuru-521165.
- 6)  Industrialist Asst. Project Manager,  
(B. Appala Naidu.) RGCA  
Manikonda.
- 7)  Student Represent P.hd –Research Scholar,  
(Ch.Chiranjeevi) Dept.of Botany & Microbiology,  
Acharya Nagarjuna University,  
Guntur.

## ZOOLOGY

### Agenda for B.O.S Meeting.

1. To recommend the syllabi (Theory & Practical), Model question paper for I Semester of I B.Sc (B.Z.C) for the academic year 2021 - 2022.
2. To recommend the syllabi (Theory & Practical), Model question paper for III Semester of II B.Sc (B.Z.C) for the academic year 2021 - 2022.
3. To recommend the syllabi (Theory & Practical), Model question paper for V Semester of III B.Sc (B.Z.C) for the academic year 2021 - 2022.
4. To recommend the Blue print for the semester end exam for I, III & V semester of I, II, III B.Sc (B.Z.C) for the academic year 2021 - 2022.
5. To introduce Life Skill Course Environmental Studies for I year students in this academic year 2021-22.
6. To introduce Skill Development Course Poultry Farming for III year students in this academic year 2021-22.
7. To recommend the teaching and evolution methods to be followed under Autonomous statues.
8. Any other matter.



Chairman



## **ZOOLOGY- RESOLUTIONS**

1. It is resolved to continue the changed syllabi (Theory & Practical), model question paper & guide lines to be followed by the question paper setters of Zoology of I semester of I B.Sc. (B.Z.C) under Choice Based Credit System (CBCS) approved by the Academic Council of 2021 – 2022.
2. It is resolved to implement **the new paper Cell Biology, Genetics, Molecular Biology & Organic Evolution** (Theory & Practical), to be followed under Choice Based Credit System (CBCS) in Zoology of III Semester of II B.Sc. (B.Z.C) approved by the Academic Council of 2021 – 2022.
3. It is resolved to implement the same syllabi & model papers under Choice Based Credit System (CBCS) Setters of Zoology of V semester of III B.Sc. (B.Z.C) approved by the Academic Council of 2021-2022.
4. It is resolved to Continue the same Blue prints of I, III, & V Semesters of B.Sc Zoology for the Academic year 2021-2022.
5. It is resolved to implement Life skill Course for I year students.
6. It is resolved to implement Skill Development Course for II year students.
7. It is resolved to continue the following teaching & evolution methods for the Academic year 2021-22.
8. Any other matter.

### **Teaching methods:**

Besides the conventional methods of teaching, we use modern technology i.e. Using of OHP and LCD projector to display on U boards etc; for better understanding of concepts.

### **Evaluation of a student is done by the following procedure:**

#### ❖ **Internal Assessment Examination:**

- ❖ Out of maximum 100 marks in each paper for II, III B.Sc, 30 marks shall be allocated for internal assessment.
- ❖ Out of these 30 marks, 20 marks are allocated for announced tests (i.e . IA-1& IA-2). Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5 marks are allocated on the basis of candidate's percentage of attendance and remaining 5 marks are allocated for the assignment for II, III B.SC.
- ❖ Out of maximum 100 marks in each paper for I B.Sc, 25 marks shall be allocated for internal assessment.
- ❖ Out of these 25 marks, 20 marks are allocated for announced tests (i.e . IA-1& IA-2). Two announced tests will be conducted and average of these two tests shall be deemed as the marks obtained by the student, 5marks allocated on the basis of candidate's percentage of attendance / assignment for I semester.
- ❖ There is no pass minimum for internal assessment for I, II, III B.Sc

#### ❖ **Semester – End Examination:**

- ❖ The maximum mark for I (BZC) semester – End examination shall be 75 marks and duration of the examination shall be 3 hours.
- ❖ The maximum mark for II, III B.Sc semester- End examination shall be 70 marks and duration of the examination shall be 3 hours. Even through the candidate is absent for two IA exams / obtain zero marks the external marks are considered (if the candidate gets 40/70) and the result shall be declared as “PASS”
- ❖ Semester – End examination shall be conducted in theory papers at the end of every semester, while in practical papers, these examinations are conducted at the end of I, III, & V semester for I, II & III B.Sc.
- ❖ Discussed and recommended for organizing Seminars, Guest lectures, Work – Shops to upgrade the Knowledge of students, for the approval of the Academic Council.

*B. A. Chinnmayee*

**Chairman**

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

**ALLOCATION OF CREDITS**

**For the Papers offered during I,III & V Semesters**

<i>Year</i>	<i>Semester</i>	<i>Title</i>	<i>Teaching hours</i>	<i>Internal marks</i>	<i>External marks</i>	<i>Credits</i>
I	I	Animal Diversity – I Biology of Non-Chordates	4	25	75	03
		Animal Diversity -Biology of Non-Chordates – Practical - I	2	10	40	01
II	III	Cell Biology, Genetics, Molecular biology & Evolution	4	30	70	03
		Practical Cell Biology, Genetics, Molecular biology & Evolution	2	25	25	01
III	V(501)	Animal Bio technology	4	30	70	03
		Practical – 501p Animal Bio technology	2	25	25	01
	V(502)	Animal Husbandry	4	30	70	03
		Practical – 502p Animal Husbandry	2	25	25	01
		Total Credits				16

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE  
OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

NACC reaccredited at 'A' level

Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Animal Diversity Biology of Non – Chordates**

Semester: - I

Course Code	<b>ZOOT11A</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	25
No. of Lecture Hours/ Week	4	Semester End Exam Marks	75
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2017-18	Year of Offering 2021-2022	Year of Revision – 2021-22	Percentage of Revision: 0%

**AIM**

- To know the biodiversity of invertebrates

**LEARNING OBJECTIVES**

- To understand the structural organization of animals from Protozoa to Hemichordate
  - To understand the evolutionary relationship of different phyla from Protozoa to Hemichordate
  - To understand the specific phenomena exhibited by different groups of invertebrates from Protozoa to Hemichordate
  - To understand the taxonomic position and affinities of certain groups of invertebrates
- AsConnecting links
- To study the life cycles, and pathogenicity of certain

**PREREQUISITE**

- Knowledge of invertebrates acquired in Intermediate

**COURSE OUTCOMES**

By the end of the course students will be able to

CO 1 Gain knowledge in the fundamental concepts underlying the structural complexity in the organization of invertebrates.

CO 2 Understand biology and pathogenicity of parasites and their adaptations analyse remedial and preventive measures and promote the same in public domain.

CO 3 Appreciate and evaluate the economic, commercial, medicinal and culture importance of invertebrates and their larval stages in relation to phylogeny

CO 4 Describe the significance of connecting links in understanding the concept of evolution

CO 5 Explain the significance of specific phenomena in different group's of invertebrates in relation to their adaptability for survival

CO 6 Comprehend the systems biology of individual phyla with a specific type study and understand the origin and evolutionary relationship of different phyla and appreciate the uniqueness of individual phyla.

Syllabus  
Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>PROTOZOA AND PORIFERA</b>            Introduction to Non-chordates – Origin of metazoans            Type study: <i>Polystomella</i>(structure and life cycle)            Locomotion in protozoans            Nutrition in protozoans            Type study: <i>Sycon</i>(Structure, histology and skeleton)            Canal system in sponges</p>	13
II	<p><b>CNIDARIA AND CTENOPHORA</b>            Type study: <i>Obelia</i>. (Structure – polyp and medusa and life cycle)            Polymorphism in cnidarians.            Corals and coral reefs            Ctenophora (structure and affinities)</p>	10
III	<p><b>HELMINTHES AND ANNELIDA</b>            Type study: <i>Fasciola hepatica</i> (Structure, reproduction, life cycle and pathogenicity)            Parasitic adaptations in helminthes            Type study: <i>Ascarislumbricoides</i>(Structure, reproduction, life cycle and pathogenicity)            Type study: <i>Hirudinaria</i>(Structure, circulatory, excretory and reproductive systems)            Coelom and coelomoducts in annelids</p>	17
IV	<p><b>ARTHROPODA AND MOLLUSCA</b>            Structural affinities of Onychophora            Type study: <i>Macrobrachiumrosenbergii</i>(Structure, appendages and Respiratory system)            Economic importance of insects (Beneficial – Lac insect, honey bee, <i>Bombyxmori</i>and Lady bird; Harmful – house fly, mosquito, locustand bedbug)            Metamorphosis in insects            Study of Pearl Oyster and Pearl Formation            Torsion in gastropods</p>	14
V	<p><b>ECHINODERMATA AND HEMICHORDATA</b>            Water-vascular system            Echinoderm larvae  <i>Balanoglossus</i>- Structure and affinities</p>	6

\*\*\*\*\*

## **TEXTBOOKS**

1. R.L. Kotpal, *Modern Text Book of Zoology - Invertebrates*.
2. P.S. Dhami and J.K. Dhami *Invertebrate Zoology*.

## **SUGGESTED READINGS**

1. L.H. Hyman, '*The Invertebrates*' Vol I, II and V. – M.C. Graw Hill Company Ltd.
2. Ruppert, Fox and Barnes, *Invertebrate Zoology - A Functional Evolutionary Approach* - Thomas Publishers. Indian Edition.
3. E.L. Jordan and P.S. Verma '*Invertebrate Zoology*' S. Chand and Company.
4. R.D. Barnes '*Invertebrate Zoology*' by: W.B. Saunders CO., 1986.
5. Barrington. E.J.W. '*Invertebrate Structure and Function*' by ELBS.
6. Sedgwick. A. '*A Student Text Book of Zoology*' Vol-I, II and III – Central Book Depot, Allahabad.

## **CO-CURRICULAR ACTIVITIES**

- Preparation of chart/model of *Elphidium* life cycle
- Visit to Zoology museum or Coral island as part of Zoological tour
- Charts on life cycle of *Obelia*, polymorphism, sponge spicules
- Clay models of canal system in sponges
- Preparation of charts on life cycles of *Fasciola* and *Ascaris*
- Visit to adopted village and conducting awareness campaign on diseases, to people as part of Social Responsibility.
- Plaster-of-Paris or Thermocol model of *Peripatus*
- Construction of a vermicompost in each college, manufacture of manure by students and donating to local farmers
- Models of compound eye, bee hive and termitarium (termitaria) by students
- Visit to apiculture centre and short-term training as part of apprenticeship programme of the govt. of Andhra Pradesh
- Chart on pearl forming layers using clay or Thermocol
- Visit to a pearl culture rearing industry/institute
- Live model of water vascular system
- Phylogeny chart on echinoderm larvae and their evolutionary significance
- Preparation of charts depicting the feeding mechanism, 3 coeloms, tornaria larva etc., of *Balanoglossus*

\*\*\*\*\*

***I SEMESTER END EXAMINATIONS***

**PAPER – I MODEL PAPER** *Cours Code: ZOOT11A*

**Title of the paper: Animal Diversity Biology of Non – Chordates**

**Time: 3 Hours**

**Max. Marks: 75**

**SECTION –A**

Draw neat labeled diagrams wherever necessary.

Answer and FIVE of the following

5x5=25 Marks

1. Describe the structure of *Polystomella* CO 1, L1
2. List out/state the different types of cells in sponges CO1, L1
3. Describe *Obelia* medusa CO1, L1
4. Describe Flame cells in *Fasciola hepatica* CO1, L1
5. Explain the significance of coelom in annelids CO2, L2
6. Explain bipinnaria larva in relation to phylogeny CO3, L2
7. Explain the process of pearl formation and its significance CO5, L2
8. *Peripatus* is a connecting link. Analyze. CO4, L4

**SECTION – B**

Answer the following questions.

5X10=50 Marks

9. Explain the different types of nutrition in protozoans. CO5, L2  
OR  
Explain the different types of canal system in sponges. CO5, L2
10. Evaluate the process of metagenesis in the life cycle of *Obelia*. CO1, L5  
OR  
Evaluate how ctenophores differ structurally from cnidarians. CO1, L5
11. Describe the life cycle of *Ascaris lumbricoides*. CO2, L2  
OR  
Describe the reproductive system of *Hirudinaria*. CO2, L2
12. Enumerate the economic importance of insects CO3, L1  
OR  
Describe torsion in gastropods as significant in larval development CO3, L1
13. Analyze the functional suitability of water vascular system in echinoderms CO5, L4  
OR  
Examine the structural affinities of *Balanoglossus*. CO4, L4

\*\*\*\*\*

**PRACTICAL- I (At the end of I Semester)**

**Title of the paper: Animal Diversity Biology of Non – Chordates**

**No of Hours: 30**

**Credits: 01**

**WEF: 2021-2022 Course Code: ZOO P11A**

**LEARNING OUTCOMES:**

By the end of the course students will be able to

1. Understand the general characters and classification from Protozoa to Hemichordata
2. Understand the importance of preservation of museum specimens
3. Identify animals based on special identifying characters
4. Understand different organ systems through demo or virtual dissections
5. Maintain a neat, labeled record of identified museum specimens
6. Exhibit the hidden creative talent

**COURSE OUTCOMES**

**CO1** To identify the characteristics and systematic position of protozoans and poriferans PO1, PO2, PO5, PO6, PO7, PSO1

**CO2** To identify the characteristics and systematic position of Cnidarians and Helmenthes. PO1, PO2, PO5, PO6, PO7, PSO1

**CO3** To identify the characteristics and systematic position of Annelids, Arthropodans and Molluscans. PO1, PO2, PO5, PO6, PO7, PSO1

**CO4** To identify the characteristics and systematic position of Echinoderms and hemichordates. PO1, PO2, PO5, PO6, PO7, PSO1

**CO5** To understand the various systems of Prawn by Dissecting and Mounting its appendages. PO1, PO2, PO5, PO6, PO7, PSO1

Syllabus  
Course Details

Unit	Learning Units
Syllabus	General characters and classification of the following phyla and sub-phyla up to classes with suitable examples: Protozoa, Porifera, Cnidaria, Platyhelminthes, Nematoda, Annelida, Arthropoda, Mollusca, Echinodermata and Hemichordata.
I	<p><b>SPOTTERS</b>            Porifera: <i>Euspongia</i>, <i>Spongilla</i>, <i>Sycon</i>.            Cnidaria: <i>Physalia</i>, <i>Velella</i>, <i>Aurelia</i>, <i>Gorgonia</i>, <i>Pennatula</i>.            Annelida: <i>Nereis</i>, <i>Heteronereis</i>, <i>Aphrodite</i>, <i>Hirudineria</i>.            Arthropoda: <i>Scylla</i>, <i>Macrobrachium</i>, <i>Scolopendra</i>, <i>Sacculina</i>, <i>Limulus</i>, <i>Scorpion</i>, <i>Peripatus</i>.            Mollusca: <i>Chiton</i>, <i>Murex</i>, <i>Unio</i>, <i>Sepia</i>, <i>Loligo</i>, <i>Octopus</i>, <i>Nautilus</i>.            Echinodermata: <i>Asterias</i>, <i>Ophiothrix</i>, <i>Echinus</i>, <i>Clypeaster</i>, <i>Cucumaria</i>, <i>Antedon</i>.            Hemichordata: <i>Balanoglossus</i></p>
II	<p><b>SLIDES</b>            Protozoa: <i>Elphidium</i>, <i>Paramoecium</i>, <i>Paramoecium</i> - Binary fission and conjugation, <i>Vorticella</i>, <i>Entamoebahistolytica</i>, <i>Plasmodium vivax</i>            Porifera: T.S and L.S. of <i>Sycon</i>, spicules, gemmule            Cnidaria: <i>Obeliacolony</i> and medusa,            Platyhelminthes: <i>Planaria</i>, <i>Fasciola hepatica</i>, <i>Fasciolalarval</i> forms (Miracidium, Redia, Cercaria) <i>Echinococcusgranulosus</i>, <i>Taeniasolium</i>            Nematoda: <i>Ascarislumbricoides</i> (male and female), <i>Ancylostomaduodenale</i> (male and female), <i>Dracunculus</i>, <i>Wuchereria</i>            Annelida: Trochophore larva            Arthropoda: Mouthparts of housefly, butter fly, male and female <i>Anopheles</i> and <i>Culex</i>, Crustacean larvae (nauplius, mysis, zoea)            Mollusca: Glochidium larva            Echinodermata: Bipinnarialarva            Hemichordata: Tornaria larva</p>
III	<p><b>DEMONSTRATION OF DISSECTIONS</b>            1. Prawn: Nervous system            Mounting of statocyst            Mounting of appendages            2. Mounting of Insect mouth parts            • Animal Album to be submitted at the time of practical examination            • Laboratory Record Book to be submitted at the time of practical examination</p>

Suggested Manuals

1. Practical Zoology- Invertebrates S.S.Lal
2. Practical Zoology - Invertebrates P.S.Verma
3. Practical Zoology K.P.Kurl



**I B.Sc. ZOOLOGY PRACTICAL EXAMINATION**

**Practical - I**

**Course Code: ZOO P11A**

**Title of the paper: Animal Diversity Biology of Non – Chordates**

**Time: 3hrs.**

**Max. Marks 40M**

- 
1. List out the general characters of Phylum ----- . CO1 L1 3 M  
2. Identify and draw a neat labeled diagram of nervous system/appendages of prawn. 7 M  
CO 4 L3 Identification: 1 M  
Diagram: 4 M  
Labeling: 2 M
2. Prepare a neat mount of statocyst/ mouth parts of cockroach. 5 M  
CO4 L3 Mounting: 2 M  
Diagram: 1 M  
Labeling: 2 M
3. Identify, draw a labeled diagram, classify and write notes on A, B, C, D and E  
CO3 L2 5 X 3 = 15 M  
A. Protozoa & Porifera  
B. Cnidaria & Platyhelminthes  
C. Nematoda & Annelida  
D. Arthropoda  
E. Mollusca, Echinodermata & Hemichordata
- Identification: 1 M  
Diagram: ½ M  
Classification: ½ M  
Comments: 1 M
4. Practical Record Book CO5 L3 5 M
5. VIVA CO6 L5 5M

**Total Marks :- 40M**

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE  
OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Cell Biology, Genetics, Molecular Biology & Evolution**

**Semester: - III**

Course Code	<b>ZOO-301C</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours/ Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2017-18	Year of Offering 2021-2022	Year of Revision – 2021-22	Percentage of Revision: 0%

**Course Outcomes:**

The overall course outcome is that the student shall develop deeper understanding of what life is and how it functions at cellular level. This course will provide students with a deep knowledge in Cell Biology, Animal Biotechnology and Evolution and by the completion of the course the graduate shall be able to–

- CO1 To understand the basic unit of the living organisms and to differentiate the organisms by their cell structure.
- CO2 Describe fine structure and function of plasma membrane and different cell organelles of eukaryotic cell.
- CO3 To understand the history of origin of branch of genetics, gain knowledge on heredity, interaction of genes, various types of inheritance patterns existing in animals
- CO4 Acquiring in-depth knowledge on various aspects of genetics involved in sex determination, human karyotyping and mutations of chromosomes resulting in various disorders
- CO5 Understand the central dogma of molecular biology and flow of genetic information from DNA to proteins.
- CO6 Understand the principles and forces of evolution of life on earth, the process of evolution of new species and apply the same to develop new and advanced varieties of animals for the benefit of the society

**Learning Objectives**

- To understand the origin of cell and distinguish between prokaryotic and eukaryotic cell
- To understand the role of different cell organelles in maintenance of life activities
- To provide the history and basic concepts of heredity, variations and gene interaction
- To enable the students distinguish between polygenic, sex-linked, and multiple allelic modes of inheritance.
- To acquaint student with basic concepts of molecular biology as to how characters are expressed with coordinated functioning of replication, transcription and translation in all living beings
- To provide knowledge on origin of life, theories and forces of evolution
- To understand the role of variations and mutations in evolution of organisms

**Syllabus**

## Course Details

Unit	Learning Units	Lecture Hours
I	<b>Unit-I Cell Biology</b> Definition, history, prokaryotic and eukaryotic cells, virus, viroids, mycoplasma Electron microscopic structure of animal cell. Plasma membrane – Models and transport functions of plasma membrane. Structure and functions of Golgi complex, Endoplasmic Reticulum and Lysosomes Structure and functions of Ribosomes, Mitochondria, Nucleus, Chromosomes (Note: 1. General pattern of study of each cell organelle – Discovery, Occurrence, Number, Origin Structure and Functions with suitable diagrams) 2. Need not study cellular respiration under mitochondrial functions)	<b>10</b>
II	<b>Unit-II Genetics –I</b> Mendel's work on transmission of traits Gene Interaction – Incomplete Dominance, Codominance, Lethal Genes Polygenes (General Characteristics & examples); Multiple Alleles (General Characteristics and Blood group inheritance) Sex determination (Chromosomal, Genic Balance, Hormonal, Environmental and Haplo-diploidy types of sex determination) Sex linked inheritance (X-linked, Y-linked & XY-linked inheritance)	<b>13</b>
III	<b>Unit-III Genetics –II</b> Mutations & Mutagenesis Chromosomal Disorders (Autosomal and Allosomal) Human Genetics – Karyotyping, Pedigree Analysis (basics) Basics on Genomics and Proteomics	<b>10</b>
IV	<b>UNIT IV: Molecular Biology</b> Central Dogma of Molecular Biology Basic concepts of – a. DNA replication – Overview (Semi-conservative mechanism, Semi-discontinuous mode, Origin & Propagation of replication fork) b. Transcription in prokaryotes – Initiation, Elongation and Termination, Post-transcriptional modifications (basics) c. Translation – Initiation, Elongation and Termination Gene Expression in prokaryotes (Lac Operon); Gene Expression in eukaryotes	<b>15</b>
V	<b>Unit-V</b> Origin of life Theories of Evolution: Lamarckism, Darwinism, Germ Plasm Theory, Mutation Theory. Neo-Darwinism: Modern Synthetic Theory of Evolution, Hardy-Weinberg Equilibrium. Forces of Evolution: Isolating mechanisms, Genetic Drift, Natural Selection, and Speciation.	<b>12</b>

**A.G. &S.G.Siddhartha Degree College of Arts & Science, Vuyyuru – 521165, Krishna  
Dt. A.P. (Autonomous)**

**Semester III** w.e.f. 2021-2022

(Model question paper)

**Title of the paper:** Cell Biology, Genetics, Molecular Biology & Evolution

**Code – ZOO-301C**

**Time: 3hrs.**

**max.marks: 70**

**Section – A**

**4 x 5= 20.**

Answer any **four** questions. Each question carries **five** marks. Draw neat labeled diagrams wherever necessary.

1. Golgicomplex
2. Nucleus,
3. LethalGenes
4. Sexdetermination
5. Mutations
- 6.Proteomics
7. Semi-conservativemechanism
8. Hardy-WeinbergEquilibrium

**Section – B 5 x 10 =50.**

Answer any **five** questions. Each question carries **Ten** marks. Draw neat labeled diagrams wherever necessary.

9. Explain the Models and transport functions of Plasmamembrane?
10. Structure and functions of Mitochondria?
11. Explain about Sex linked inheritance?
12. Give an account of Chromosomal Disorders?
13. Explain about Translation?
14. Write an essay on Gene Expression in prokaryotes?
15. Explain about theory of Lamarckism & Darwinism?
16. Write an essay on Speciation?

\*\*\*\*\*

**A.G. & S.G.Siddhartha Degree College of Arts & Science, Vuyyuru – 521165,  
Krishna Dt. A.P. (Autonomous)**

**Semester -III**

**Guide**

**lines to the Paper Setter.**

**W.e.f. 2021-**

**2022 Title of the paper: Cell Biology, Genetics, Molecular Biology & Evolution**

**Code – ZOO-301C**

**Time: 3hrs.**

**Max. Marks: 70.**

1. Answer any **four** questions out of eight in Section – A. Each question carries five marks.  $4 \times 5 = 20M$ .

2. Answer any **five** questions out of eight in Section – B. Each question carries Ten marks.  $5 \times 10 = 50M$ .

	Section	UNIT-I	UNIT-II	UNIT-III	UNIT-IV	UNIT-V
<b>5 Marks Questions</b>	<b>A</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>
<b>10 Marks Questions</b>	<b>B</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>
<b>Weightage</b>		<b>30</b>	<b>25</b>	<b>20</b>	<b>25</b>	<b>25</b>

**Note:** 1. please provide the scheme of valuation for the paper.

2. Question paper should be in English medium.

\*\*\*\*\*

## REFERENCES:

1. Lodish, Berk, Zipursky, Matsudaria, Baltimore, Darnell 'Molecular Cell Biology' W.H. Freeman and company New York.
2. Cell Biology by De Robertis
3. Bruce Alberts, Molecular Biology of the Cell
4. Rastogi, Cytology
5. Varma & Aggarwal, Cell Biology
6. C.B. Pawar, Cell Biology
7. Gardner, E.J., Simmons, M.J., Snustad, D.P. (2008). Principles of Genetics. VIII Edition. Wiley India.
8. Snustad, D.P., Simmons, M.J. (2009). Principles of Genetics. V Edition. John Wiley and Sons Inc.
9. Klug, W.S., Cummings, M.R., Spencer, C.A. (2012). Concepts of Genetics. X Edition. Benjamin Cummings.
10. Russell, P. J. (2009). Genetics- A Molecular Approach. III Edition. Benjamin Cummings.
11. Griffiths, A.J.F., Wessler, S.R., Lewontin, R.C. and Carroll, S.B. Introduction to Genetic Analysis. IX Edition. W. H. Freeman and Co.
12. Ridley, M. (2004). Evolution. III Edition. Blackwell Publishing
13. Molecular Biology by Freifelder
14. Instant Notes in Molecular Biology by Bios scientific publishers and Viva Books Private Limited
15. Hall, B. K. and Hallgrímsson, B. (2008). Evolution. IV Edition. Jones and Bartlett Publishers
16. Campbell, N. A. and Reece J. B. (2011). Biology. IX Edition, Pearson, Benjamin, Cummings.
17. Douglas, J. Futuyma (1997). Evolutionary Biology. Sinauer Associates.
18. Minkoff, E. (1983). Evolutionary Biology. Addison-Wesley.
19. James D. Watson, Nancy H. Hopkins 'Molecular Biology of the Gene'
20. Jan M. Savage. Evolution, 2nd ed., Oxford and IBH Publishing Co., New Delhi.
21. Gupta P.K., 'Genetics

PRACTICAL – III

Code: ZOO- 301P

w.e.f. 2021-2022

MAX.MARKS: 50.

(2hrs/week)

**Cell Biology, Genetics, Molecular Biology & Evolution**

**PRACTICAL SYLLABUS**

Learning Objectives:

- Acquainting and skill enhancement in the usage of laboratory microscope
- Hands-on experience of different phases of cell division by experimentation
- Develop skills on human karyotyping and identification of chromosomal disorders
- To apply the basic concept of inheritance for applied research
- To get familiar with phylogeny and geological history of origin & evolution of animals

Syllabus

Course Details

Unit	Learning Units
I	I. Cell Biology 1. Preparation of temporary slides of Mitotic divisions with onion root tips 2. Observation of various stages of Mitosis and Meiosis with prepared slides 3. Mounting of salivary gland chromosomes of <i>Chironomus</i>
II	II. Genetics 1. Study of Mendelian inheritance using suitable examples and problems 2. Problems on blood group inheritance and sex linked inheritance 3. Study of human karyotypes (Down's syndrome, Edwards syndrome, Patau syndrome, Turner's syndrome and Klinefelter syndrome)
III	III. Evolution 1. Study of fossil evidences 2. Study of homology and analogy from suitable specimens and pictures 3. Phylogeny of horse with pictures 4. Study of Genetic Drift by using examples of Darwin's finches (pictures) 5. Visit to Natural History Museum and submission of report

**A. G & S. G. S. DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU 521165, KRISHNA Dt.,  
A.P. (AUTONOMOUS)  
PAPER – III**

**(Cell Biology, Genetics, Molecular Biology & Evolution)**

w.e.f.2021-22.

*Model Question paper (External)Max.Marks: 25 M.*

Paper Code: ZOO-301P

**I. Cell Biology**

1. Identify, draw neat labeled diagram & notes of the following stages. 2x2 ½= 5M.  
A & B

**II. Genetics**

- 1.Genetics Problem. 5M.  
2. Identify the following Chromosomes & Comment. 2x2 ½= 5M.  
A & B

**III. Evolution**

1. Identify the given pictures and write the Comment. 2x2 ½= 5M  
A & B  
2. Identify the given pictures and Comment. 2x2 ½= 5M  
A & B

\*\*\*\*\*

**A. G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU-521165  
ZOOLOGY PRACTICAL -III**

**(INTERNAL)  
w.e.f. 2021-2022.**

**(2hrs/week).**

**Cell Biology, Genetics, Molecular Biology & Evolution  
Code: ZOO-301P.**

**Max.marks:25M.**

Time: 3hrs.

1. Attendance ----- 5M.  
2. Record ----- 10M.  
3. Field trip & Field note book -----10M.

**Total ----- 25M.**



**A. G & S. G. S. DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU 521165, KRISHNA Dt., A.P.**  
**(AUTONOMOUS)**  
**PAPER – III**

**Guide lines for the practical Examiner**

W.e.f.2021-2022

Class: II B.Z.C

Paper Title: **(Cell Biology, Genetics, Molecular Biology & Evolution)**

Paper Code: ZOO-301P

Max.Marks: 25 M.

.....

**I.Cytology**

1. Slide A from Mitosis & Slide B Meiosis.  $2 \times 2 \frac{1}{2} = 5M.$   
( $\frac{1}{2}$  mark for identification, 1 mark for labeled diagram & 1 mark for comments)

**II.Genetics**

2. Checker board 2M.  
Explanation 3M.
3. Identify & Comment on A& B (From Chromosomes).  $2 \times 2 \frac{1}{2} = 5M$   
A-Identification – 1 M, Comment –  $1 \frac{1}{2} M$   
B-Identification – 1 M, Comment –  $1 \frac{1}{2} M$

**III.Evolution**

4. Identify & Comment on A& B(A- fossil evidence, B – Homology & Analogy)  $2 \times 2 \frac{1}{2} = 5M$   
A-Identification – 1 M, Comment –  $1 \frac{1}{2} M$   
B-Identification – 1 M, Comment –  $1 \frac{1}{2} M$
5. Identify & Comment on A& B (A- Phylogeny of Horse, B – Darwin's Finches)  $2 \times 2 \frac{1}{2} = 5M$   
A-Identification – 1 M, Comment –  $1 \frac{1}{2} M$   
B-Identification – 1 M, Comment –  $1 \frac{1}{2} M$

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE  
OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: Animal Biotechnology

**Semester: - V**

Course Code	<b>ZOO-501</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours/ Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2017-18	Year of Offering 2021-2022	Year of Revision – 2021-22	Percentage of Revision: 0%

Objective of the course: To educate students on various biotechnological techniques involve in animal biotechnology, gene manipulations, their role in production of medicines and transgenic animals.

Course outcomes:

CO1 Students are made to become aware of the use of technology that is involved in cloning.

CO2 Improved quality of species with gene manipulations

CO3 Recent development in biotechnology that helps for better environment and  
Production of various monoclonal antibodies and vaccines.

CO4 Formation of different species - transgenic animals

CO5 Resistant variety and better yield

Learning Objectives

- To understand the natural function of Restriction enzymes and explained how they are used in r-DNA technology.
- To understand the features & Types of cloning vectors.
- Purposes and applications of r-DNA techniques.
- To understand uses of DNA probes.  
To understand gene transfer technologies for animals and animal cell lines.
- Explain how the creation of sticky ends by restriction enzymes in use full in producing a r-DNA technologies.
- To understand the process of nucleic acid hybridization .

Syllabus  
Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Unit 1: Tools of Recombinant DNA technology - Enzymes and Vectors</b>  Restriction modification systems : Types I, II and III- Nomenclature, Applications of Type II restriction enzymes in genetic engineering ,DNA polymerases, transferase, kinases and phosphatases,and DNA ligases  Cloning Vectors: : Properties of Cloning Vectors Plasmid vectors:pBR and pUC 18, Bacteriophage and, Cosmids.Artificial Chromosome Vectors: BACs, YACs</p>	15
II	<p><b>Unit 2: Techniques of Recombinant DNA technology</b>  Cloning: Procedure of gene cloning, Use of linkers and adaptors. Microinjection, electroporation, biolistic method (gene gun). PCR:- Basics of PCR, Principle and Procedure of PCR.  DNA Sequencing: Sanger's method of DNA sequencing- traditional and automated sequencing.  Southern, Northern and Western blotting. DNA finger printing,</p>	15
III	<p><b>UNIT 3 Animal Cell Technology</b>  Cell culture media: Natural and Synthetic, Types Cell cultures-: primary culture, secondary culture. Continuous cell lines , Established Cell lines (common examples such as MRC, HeLa,CHO, BHK, )  Cryopreservation of cultures, Hybridoma Technology:- Cell fusion, Production of Monoclonal antibodies (mAb), Applications of mAb  Stem cells: Types of stem cells- Embryonic and Adult Stem Cells, Diabetes and Parkinson's diseases.</p>	10
IV	<p><b>Unit 4: Reproductive Technologies &amp; Transgenic Animals</b>  Manipulation of reproduction in animals, Artificial Insemination, <i>In vitro</i> fertilization.  Super ovulation, Embryo transfer, Embryo cloning.  Transgenic Animals- Production of Transgenic Animals- sheep, fish.</p>	10
V	<p><b>Unit 5: Applied Biotechnology</b>  Industry: Fermentation- Different types of Fermentation. Submerged &amp; Solid state, batch, Fed batch &amp; Continuous (Short notes only)  Downstream processing - Filtration, centrifugation, chromatography, spray drying ,  Fisheries: Polyploidy in fishes.</p>	10

SEMESTER-V (Model Question paper)

w.e.f.- 2021-2022. *Paper*

*Title:Animal Biotechnology.*

*Paper Code: ZOO 501C*

*Time: 3 hrs.*

Max.Marks:70

.....  
**Part – A**

Answer **any FOUR** questions out of eight in Part - A. Each question carries five marks. **4 X 5 = 20**

**Part – B**

- 1.Ligases
- 2.YAC
- 3.Southern Blotting
- 4.DNA Fingerprinting
- 5.Applications of mAb
- 6.Polyploidy in fishes
- 7.Invitro fertilization
- 8.Chromatography

**Part – B**

Answer **any FIVE** questions out of eight in Part - B .Each question carries Ten marks. **5 X 10 = 50**

9. Write an essay on cloning vectors.
10. Explain the role of Type II Restriction enzymes in genetic engineering.
11. Define gene cloning .Describe the procedure of gene cloning in detail.
12. What is PCR. Briefly describe various steps of PCR.
13. Define Stem Cell Technology ? Briefly describe about it.
14. Write in detail about the transgenic animals.
15. Write an essay on different types of fermentation.
16. Briefly describe the technology of super ovulation and Embryo transfer in cattle's and discuss their applications and limitations.

\*\*\*\*\*

**SEMESTER-V****Time: 3 hrs****Max.Marks:70****Guide lines to the paper setter****Paper Title: Animal Biotechnology****Paper Code: ZOO -501C**

*Note:*1. Answer **any FOUR** questions out of eight in Part-A . Each question carries five marks.  $4 \times 5 = 20M$ .

2. Answer any **FIVE** questions out of eight in Part-B . Each question carries 10 marks.  $5 \times 10 = 50M$ .

	<b>PART</b>	<b>Unit – I</b>	<b>Unit – II</b>	<b>Unit – III</b>	<b>Unit – IV</b>	<b>Unit – V</b>
<b>5 Marks Questions</b>	<b>A</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>2</b>
<b>10 Marks Questions</b>	<b>B</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>1</b>
<b>Weightage</b>		<b>30</b>	<b>30</b>	<b>15</b>	<b>25</b>	<b>20</b>

- Note:**
1. please provide the scheme of valuation for the paper.
  2. Question paper should be both in English and Telugu media.

\*\*\*\*\*

**Reference Books:-**

1. Brown TA. (2010). Gene Cloning and DNA Analysis. 6th edition. Blackwell Publishing , Oxford,U.K
2. Clark DP and Pazdernik NJ. (2009). Biotechnology: Applying the Genetic Revolution. ElsevierAcademic Press, USA
3. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford, U.K.

\*\*\*\*\*

A. G & S. G. S. DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU 521165, KRISHNA Dt., A.P.  
(AUTONOMOUS)

ZOOLOGY PRACTICAL SYLLABUS

PAPER - V

Periods: 30 Code: ZOO-501P

Credits :2 Paper Title : Animal Biotechnology

Max.Marks:50

Unit	Learning Units
SYLLABUS	1. Genomic DNA isolation from <i>E. coli</i> .
	2. Plasmid DNA isolation (pUC 18/19) from <i>E. coli</i>
	3. Study the following techniques through photographs. a. Southern blotting. b. Western blotting. c. DNA sequencing (Sanger's method) d. DNA finger printing
	4. PCR (demonstration) on site or of site demonstration
	5. Project report on animal cell culture

\*\*\*\*\*

A.G & S. G.S.DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU - 521165, KRISHNA Dt., A.P.  
(AUTONOMOUS)

*Practical - V*                      *w.e.f. 2021- 22*  
*(Animal Biotechnology)*                      *Max. Marks: 25*  
*Model Question Paper (External)*                      *Paper Code: ZOO-501P*

- 
1. Identify the following Genomic DNA isolation from *E. coli*. 5m
  2. Identify the following Plasmid DNA isolation (pUC 18/19) from *E. coli*.                      5m
  3. Study the following techniques given on photographs & Write notes on                      2x5=10  
A & B
  4. PCR (demonstration) on site or of site demonstration.                      5m
- Total:                      25m

Guide lines for the Practical Examiners.

Class: III B.Z.C  
Paper Title: Animal Biotechnology.  
Max.Marks: 25 M.

W.e.f.2021-22.

Paper Code: ZOO-501C

---

1. Identify the following Genomic DNA isolation from *E. coli*.  
( 5 marks for Procedure)
2. Identify the following Plasmid DNA isolation (pUC 18/19) from *E. coli* .  
( 5 marks for Procedure)
3. Study the following techniques given on photographs & Write notes on A & B.  
(1 mark for identification & 4 marks for diagram and notes, for each photographs)
4. PCR (demonstration) on site or of site demonstration.  
( 5 marks for PCR demonstration)

\*\*\*\*\*

A.G & S. G.S.DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU - 521165, KRISHNA Dt., A.P.  
(AUTONOMOUS)

*Practical – V*  
*(Animal Biotechnology)*  
*Model Question Paper (Internal)*

*w.e.f. 2021-22*  
*Max. Marks: 25*  
*Paper Code: ZOO-501P*

---

1. Attendance	--	5 M
2. Record	--	10M
3. Field trip & Field note book	--	10M
	Total --	25M

\*\*\*\*\*

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE  
OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: Animal Husbandry

**Semester: - V**

Course Code	<b>ZOO-502</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	3	CIA Marks	30
No. of Lecture Hours/ Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2017-18	Year of Offering 2021-2022	Year of Revision – 2021-22	Percentage of Revision: 0%

**Objective of the course:** To help students to stand on their own legs, acquire skills in poultry and Dairy farms and to set up their own firms.

**Course outcomes:**

CO1; Students are given awareness about different varieties of chicks.

CO2: Students are familiarized with recent technologies those are applied to produce different species with variations which are more beneficial and income fetching.

CO3: Students with the help of self help schemes, can set up their own firms, and provide

CO4: Employability to others and to tap the resources of Government and Non governmental sectors.

CO5: They are given managerial and marketing skills as well.

**Learning Objectives**

- To understand production of milk, meat, egg and other animal bi – products.
- To understand delivery of necessary livestock health care through timely immunization against total diseases, proper diagnosis and rational treatment for optimization of livestock production.
- To understand fulfil the objective of protein enriched quality food requirement of the growing population of the country and prevent malnutrition in one the highest malnourished children population in the world.
- To understand principles of feeding and nutrient requirements for different stages of layers and broilers.
- To make available quality concentrated animals feed to the cattle, buffalo, sheep and poultry to provide balanced ration at affordable prices.



## Syllabus

## Course details

Unit	Learning Units	Lecture Hours
I	<b>UNIT – I:</b> General introduction to poultry farming, Principles of poultry housing. Poultryhouses. Systems of poultry farming. Management of chicks, growers, layers, and Broilers.	10
II	<b>UNIT – II:</b> Poultry feed management – Principles of feeding. Nutrient requirements for different stages of layers and broilers. Methods of feeding- Whole grain feeding system, Grain and mash method, All mash method, Pellet feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.	10
III	<b>UNIT – III:</b> Selection, care and handling of hatching eggs, Egg testing. Methods of hatching. Brooding and rearing, Sexing of chicks.	10
IV	<b>UNIT- IV:</b> Breeds of Dairy Cattle and Buffaloes – Definition of breed; Classification of Indian Cattle breeds, exotic breeds and Indian buffalo breeds. Systems of inbreeding and crossbreeding. Housing of dairy animals – Selection of site for dairy farm; systems of housing – loose, housing system. Conventional dairy barn.	20
V	<b>UNIT - V:</b> Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks. Cleaning and sanitation of programme. Records to be maintained in a dairy farm.	10

SEMESTER-V (Model Question paper)

Time: 3 hrs Paper Code: Zoo-502C

Paper Title: Animal Husbandry Max.Marks:70

---

**Part – A**

Answer **any FOUR** questions out of eight in Part - A . Each question carries five marks. **4 X 5 = 20**

1. Principles of poultry farming.
2. Chick management.
3. Poultry feed management.
4. Marek's disease.
5. Egg testing (Candle test)
6. Cleaning and sanitation of Dairy farm.
7. Milk record register
8. Loose housing system

**Part – B**

Answer **any five** questions out of eight in Part - B .Each question carries Ten marks. **5 X 10 = 50**

9. Write an essay on systems of poultry farming
10. Write an essay on management of Broilers
11. Write an essay on symptoms control and management of two viral and bacterial diseases.
12. Write an essay on methods of feeding in Poultry
13. Write an essay on different methods of hatching eggs
14. Give an account of breeds of Indian Cows
15. Explain the vaccination programme in Cattle
16. Write an essay on care and management of Calf, heifer and milk animals

\*\*\*\*\*

SEMESTER-V

Time: 3 hrs

Max.Marks:70

Guide lines to the paper setter

Paper Title: Animal Husbandry.

Paper Code: 502C

Note: 1. Answer **any FOUR** questions out of eight in Part-A . Each question carries five marks. 4 X 5 = 20M.

2. Answer any **five** questions out of eight in Part-B . Each question carries 10 marks. 5 X 10 = 50M.

	PART	Unit – I	Unit – II	Unit – III	Unit – IV	Unit – V
<b>5 Marks Questions</b>	A	2	2	1	2	1
<b>10 Marks Questions</b>	B	2	2	1	2	1
<b>Weightage</b>		30	30	15	30	15

**Note:** 1. please provide the scheme of valuation for the paper.

2. Question paper should be both in English and Telugu media.

\*\*\*\*\*

**Text Books:-**

1. Animal Husbandry: ---- Technical Test paper.
2. Poultry- Technical Revised Common Core.
3. Animal Husbandry --- Dr.K.Kondaiah, A.V.N.Gupta.

\*\*\*\*\*

ZOOLOGY PRACTICAL SYLLABUS

Period: 30

PAPER – VI

Credits:2

Paper Code: Zoo-502P

Paper Title: Animal Husbandry

Max.Marks:50

Unit	Learning Units
SYLLABUS	1. Study of various breeds of layers and broilers (photographs)
	2. Identification of disease causing organisms in poultry birds (as per theory)
	3. Study of the anatomy of a poultry bird by way of dissecting a bird. (Demonstration)
	4. Study of various activities in a poultry farm (layers and broilers) and submission of a report.
	5. Study of various breeds of cattle (photographs/microfilms)
	6. Study of various activities carried out in a dairy farm and submission of a report.

\*\*\*\*\*

A.G & S. G.S.DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU - 521165, KRISHNA Dt., A.P.  
(AUTONOMOUS)

**Practical - VI**

**(Animal Husbandry)**

**Max. Marks: 50**

*Model Question Paper (External)*

*Paper Code: ZOO-502P*

1. Study of various breeds of layers and broilers (photographs) A & B	2X2 <sup>1</sup> / <sub>2</sub> =5M
2. Identification of disease causing organisms in poultry birds (as per theory) A & B	2X2 <sup>1</sup> / <sub>2</sub> =5M
3. Study of the anatomy of a poultry bird by way of dissecting a bird. (Demonstration)	5M
4. Study of various breeds of cattle (photographs/microfilms) A & B	2X5=10M
Total --	25M

\*\*\*\*\*

**A.G & S. G.S.DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU - 521165, KRISHNA Dt., A.P.  
(AUTONOMOUS)**

**Guide lines for the Practical Examiners.**

Class: III B.Z.C

Paper Title: (Animal Husbandry)

*Max.Marks: 25m*  
Paper Code: ZOO-502C

- 
1. Identify and comment on A & B (Charts / Photographs).  
(Identification -  $\frac{1}{2}$  mark & Comments -2m)
  2. Identify and comment on A & B (Charts / Photographs)  
(Identification -  $\frac{1}{2}$  mark & Comments -2m)
  3. Demonstration: (4 marks for diagram & 1 mark for labeling)
  4. Identify and comment on A & B (Photographs/ microfilms).  
(Identification -1 mark & Comments -4m)

\*\*\*\*\*

A.G& S. G.S.DEGREE COLLEGE OF ARTS & SCIENCE, VUYURU - 521165, KRISHNA Dt., A.P. (AUTONOMOUS)

**Animal Husbandry**

**Practical - V I**  
**Max. Marks: 50**

**Model Question Paper (Internal) Paper Code: ZOO-502P**

---

1. Attendance	--	5 M
2. Record	--	10M
3. Field trip & Field note book (Any one)	--	10M

Total -- 25M

\*\*\*\*\*

**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE  
OF ARTS & SCIENCE, VUYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Environmental Studies.**

**Semester: - I**

Course Code		Course Delivery Method	Class Room/Blended Mode - Both
Credits	2	CIA Marks	10
No. of Lecture Hours/ Week	10	Semester End Exam Marks	40
Total Number of Lecture Hours	30	Total Marks	50
Year of Introduction : 2021	Year of Offering 2020-2021	Year of Revision – 2021-22	Percentage of Revision: 0%

<b>LIFE SKIL COURSE</b>	<b>CLAC001</b>	<b>2021-2022</b>	<b>B.A., B.Com., A.B.C.,&amp;B.Sc</b>
-------------------------	----------------	------------------	---------------------------------------

**CO1:** Realize the importance of environment, the goods and services of a healthy biodiversity, dependence of humans on environment.

**CO2:** Evaluate the ways and ill effects of destruction of environment, population explosion on ecosystems and global problems consequent to anthropogenic activities.

**CO3:** Discuss the laws/ acts made by government for environmental conservation and acquaint with international agreements and national movements and realize citizen's role in protecting environment and nature.

Syllabus  
Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Unit 1: Environment and Natural Resources</b> Multidisciplinary nature of environmental education. Scope and importance of environmental education. A brief account of forest, water and renewable energy resources. Biodiversity introduction, Levels of Biodiversity: genetic, species and ecosystem diversity. Concept, Structure and functions of an Ecosystem.</p>	8
II	<p><b>Unit 2 : Environmental degradation and Impacts</b> Threats to Biodiversity: Natural calamities, habitat destruction and fragmentation, over exploitation, hunting and poaching, introduction of exotic species, pollution, predator and pest control. A brief account of causes and effects of Air, Water, Soil and Noise pollution. Non-renewable energy resources, their utilization and influences. Climate change, Global warming, Acid rains, Ozone depletion. Human population growth and its impacts on environment; land use change, land degradation, soil erosion and desertification.</p>	12
III	<p><b>Unit 3: Conservation of Environment</b> Conservation of biodiversity: In-situ and ex-situ conservation of biodiversity. Control measures for various types of pollution; use of renewable and alternate sources of energy. Solid waste management- Measures for safe urban and Industrial wastes disposal. Environment Laws: Environment Protection Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols. Environmental movements: Bishnois of Rajasthan, Chipko, Silent valley.</p>	10

**Suggested activities to learner:**

1. Visit to a local polluted site-Urban/Rural/Industrial/Agricultural site.
2. Visit to a local waste disposal/ land filling site

**Reference Books :**

1. Environmental Studies by Dr.M.Satyanarayana, Dr.M.V.R.K.Narasimhacharyulu, Dr.G. Rambabu and Dr.V.VivekaVardhani, Published by Telugu Academy, Hyderabad.
2. Environmental Studies by R.C.Sharma, Gurbir Sangha, published by Kalyani Publishers.
3. Environmental Studies by Purnima Smarath, published by Kalyani Publishers

**MODEL PAPER**  
**AEC002 /HRDMM/**

**Title of the paper: Environmental Studies.**

**No. of Pages:-1.**

**Max. Marks: 40M**

**Time: 2 Hrs**

**No. of Questions: 16 Pass min. 16M**

---

**SECTION –A**

Answer any FOUR of the following:

4x7=28 M

1. Explain the scope and importance of environmental studies?

.

2. Give an account of renewable energy resources?

.

3. Define ecosystem. Explain the structural components of an ecosystem?

.

4. Define biodiversity. Explain various strategies for its conservation?

.

5. Explain the causes, effects and control measures of air pollution?

.

6. Give an account on environmental acts?

**SECTION –B**

Answer any SIX of the following:

6x2=12 M

7. Deforestation.

8. Chipko movement

9. Food chain

10. Biodiversity Hotspots

11. Poaching

12. Floods

13. Earthquakes

14. Rainwater harvesting

15. Global warming

16. Population explosion



**ADUSUMILLI GOPALAKRISHNAIAH & SUGAR CANE GROWERS SIDDHARTHA DEGREE COLLEGE  
OF ARTS & SCIENCE, VUYYURU-521165, KRISHNA Dt., A.P. (AUTONOMOUS).**

NACC reaccredited at 'A' level  
Autonomous –ISO 9001-2015 Certified

Title of the Paper: **Poultry Farming**

**Semester: - III**

Course Code	<b>PF-301</b>	Course Delivery Method	Class Room/Blended Mode - Both
Credits	2	CIA Marks	00
No. of Lecture Hours/ Week	10	Semester End Exam Marks	50
Total Number of Lecture Hours	30	Total Marks	50
Year of Introduction :	Year of Offering 2020-2021	Year of Revision – 2021-22	Percentage of Revision: 0%

<b>SKILL DEVELOPMENT COURSE</b>	<b>Course code: PF-301</b>	<b>2021-2022</b>	<b>A.B.C., &amp; B.Sc</b>
---------------------------------	--------------------------------	------------------	---------------------------

**Learning Outcomes:**

By successful completion of the course, students will be able to;

1. Understand the field level structure and functioning of insurance sector and its role in protecting the risks
2. Comprehend pertaining skills and their application for promoting insurance coverage
3. Prepare better for the Insurance Agent examination conducted by IRDA
4. Plan 'promoting insurance coverage practice' as one of the career options.

Syllabus  
Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Section I (Introduction to Poultry Farming):</b>            General introduction to poultry farming -Definition of Poultry; past and present scenario of poultry industry in India.            Principles of poultry housing. Poultry houses. Systems of poultry farming.            Management of chicks, growers and layers. Management of Broilers.            Preparation of project report for banking and insurance</p>	10
II	<p><b>Section II (Feed and Livestock Health Management):</b>            Poultry feed management – Principles of feeding, Nutrient requirements for different stages of layers and broilers. Feed formulation and Methods of feeding.            Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management; Vaccination programme.</p>	10
III	<p><b>Section III (Harvesting of Eggs and Sanitation):</b>            Selection, care and handling of hatching eggs. Egg testing .Methods of hatching.            Brooding and rearing. Sexing of chicks.            Farm and Water Hygiene, Recycling of poultry waste.</p>	10

**Co- Curricular Activities suggested:**

**(4 Hrs)**

1. Group discussion & SWOT analysis
2. Visit to a poultry farm
3. Invited Lectures by Concerned officers of government or private farms
4. Cheap and Healthy Feed preparation by students based on government standards
5. Market study and Survey (Monitoring of daily price hike in poultry market and analysis)
6. Online Swayam Moocs course on poultry farming (see reference 9 below)

**Reference books:**

1. Sreenivasaiah., P. V., 2015. Textbook of Poultry Science. 1st Edition. Write & Print Publications, New Delhi
2. Jull A. Morley, 2007. Successful Poultry Management. 2nd Edition. Biotech Books, New Delhi"

**Semester –III**

w.e.f. 2021-2022 Time: 90 mins (Model question paper)

Title of the paper: Poultry Farming. Code – PF- 301(SDC)

max.marks: 50

---

**Section – A**

Answer any **four** questions. Each question carries **five** marks.  $4 \times 5 = 20$ .

1. Poultry house
2. Broilers
3. Any two viral diseases of poultry
4. Any two bacterial diseases of poultry
5. Any two fungal diseases of poultry
6. Egg testing
7. Brooding
8. Sexing chicks

**Section – B**

Answer any **three** questions. Each question carries **Ten** marks.  $3 \times 10 = 30$

9. Discuss briefly the past, present and future scenario of poultry farming industry in India
10. Explain principles of poultry housing in detail, with examples.
11. Write an essay on viral diseases of poultry.
12. Give an account of fungal and bacterial diseases (any two each) of poultry
13. Write an essay on selection, handling and hatching of eggs.

\*\*\*\*\*

A.G & S.G.S.DEGREE COLLEGE OF ARTS & SCIENCE, VUYYURU 521165, KRISHNA Dt., A.P.  
(AUTONOMOUS)

**SEMESTER-III  
SKILL DEVELOPMENT COURSE**

**Guide lines to the paper setter**

**Time: 1<sup>1</sup>/<sub>2</sub> hrs**

**Max.Marks:50**

**Paper Title: - Poultry Farming.**

**Paper Code: PF-301 (SDC)**

---

*Note:*1. Answer **any four** questions out of eight in Part-A. Each question carries five marks.4X 5 = 20M.

2. Answer any**three** questions out of five in Part-B. Each question carries 10 marks.3 X 10 = 30M.

	<b>PART</b>	<b>Unit –I</b>	<b>Unit – II</b>	<b>Unit-III</b>
<b>5 Marks Questions</b>	<b>A</b>	<b>2</b>	<b>3</b>	<b>3</b>
<b>10 Marks Questions</b>	<b>B</b>	<b>2</b>	<b>2</b>	<b>1</b>
<b>Weightage</b>		<b>30</b>	<b>35</b>	<b>25</b>

- Note:**
1. please provide the scheme of valuation for the paper.
  2. Question paper should be both in English and Telugu media.

**AG & SG SIDDHARTHA DEGREE COLLEGE OF  
ARTS & SCIENCE (AUTONOMOUS)VUYYURU-  
521165**

Aided by the Government of A.P, Re-Accredited by NAAC with 'A'Grade

2021-2022




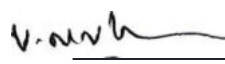


***PG Department of Chemistry***

**Minutes of the meeting of Board of Studies  
11-11-2021**

## MINUTES OF BOARD OF STUDIES

Minutes of meeting of Board of studies in PG Department of Chemistry held on 11-11-2021 at 7.00 pin in the PG Department of Chemistry through online (Google meet)

### Members Present

S.No	NAME		Signature
1	<b>Dr. V.Sreeram</b> Head, Dept. of Chemistry(P.G) AG & SG S College, Vuyyuru.	Chairman	
2	<b>Prof.C.Suresh Reddy</b> Department of Chemistry S.V. University, Tirupati.	University Nominee	
3	<b>Prof. Koya Prabakar Rao</b> Department of Chemistry Vignan University, Guntur.	Subject Expert	
4	<b>Dr.M.Sivanath</b> Associate prof. Dept. of Chemistry A.N.R.College, Gudivada.	Subject Expert	
5	<b>Dr.G.Raja</b> Manager(Q.A) Biophore India pharamaceuticals. Hyderabad.	Representative from Industry	
6	<b>Abdul Raheem</b>	One Post Graduate Meritorious Aluminous nominated by the Principal	
7	<b>N.V.Srinivasa Rao</b> Department of Mathematics AG & SG S College, Vuyyuru.	Representative Science Faculty Other Dept.	
8	<b>V.N.V.Kishore</b> Dept. of Chemistry(P.G) AG & SG S College, Vuyyuru	Member	
9	<b>Dilshad Begum</b> Dept. of Chemistry(P.G) AG & SG S College, Vuyyuru	Member	
10	<b>M.Rekha</b> Dept. of Chemistry(P.G) AG & SG S College, Vuyyuru	Member	

## AGENDA:

1. To Review and modified syllabus and model question papers, discuss & approve modalities of lab courses.
2. To suggest methodologies for innovative methods of teaching
3. Any other matter with the permission of the Chair
4. Molecular Spectroscopy, Rotational Vibrational Spectroscopy, Symmetry and Group theory in chemistry in paper I semester I
5. To recommend the changed syllabus potentiometry V in semester I

### **Resolutions**

#### **Resolution –I**

1. Resolved to recommend the framed Syllabus & Model Question Papers for theory courses of SEM III and approve the modalities of Lab Courses as prescribed by BOS members.
2. Resolved to conduct assignments etc., for Internal Assessment Tests.
3. It is resolved to change the syllabus in III, IV, V units namely Introduction to Molecular Spectroscopy, Rotational Vibrational Spectroscopy, Symmetry and Group theory in chemistry in paper I semester I
4. It is resolved to add potentiometry in paper IV of semester I

#### **4 Resolution –II**

Resolved to adopt online teaching methods like as ZOOM, Microsoft teams, Google meet etc for ICT (Information and communication technologies) teaching

#### **Resolution –III**

5. Nil



**BOS Meeting- PG Chemistry-11-11-2021, 7.00PM.through Online (Google Meet) Syllabus**

**approval letter through mail.**

**1 Prof.C.Suresh Reddy**

Dear Dr. Sreeram Greetings  
of the day

Happy to participate In the today's BOS meeting. I have gone through the syllabus and it is fine. I am here with approving the same syllabus.

This is for your kind information and necessary action in this regard. Prof .C.Suresh Reddy

**Prof. C. Suresh Reddy, FAPAS, MNASc Department of Chemistry**

**S.V.U. College of Sciences Sri**

**Venkateswara University**

**Tirupati-517 502, A.P., India**

Mobile: 98496949582

**.Prof.K.prabhakara Rao**

Dear sir,

I am here accepting the proposed syllabus. Thank you. Warm regards

Prof. KoyaPrabhakara Rao

Ph.D. (IIT Madras) (Postdoc-Japan 5yrs)

Head, Division of Chemistry # VGF-

8&9A, H-Block

Department of Science and Humanities VFSTR (Deemed to be University), Vadlamudi,

Guntur Dt, Pincode: 522213, Andhra Pradesh India. Phone (Office): 918632344762,

Mobile: +919676157858

Email: [drkpr\\_sh@vignan.ac.in](mailto:drkpr_sh@vignan.ac.in);

[kprao2005@gmail.com](mailto:kprao2005@gmail.com) website1: <https://sites.google.com/site/drkoyaprabhakararaowebiste/> website2: <http://www.vignan.ac.in/bshprabhakararao.php>

**3.Dr.M.Sivanath**

I have gone through your mail regarding the Third & First semester and open electiveSyllabus.

It is fine and approved.

This is for your kind information and necessary action in this regard. Warm regards

**Dr.M.Sivanath,**

**Associate prof., Dept. of Chemistry, [sivanath23@gmail.com](mailto:sivanath23@gmail.com)**

**Vice principal, Additional Director, ANR College, Gudivada**



**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**(Autonomous)**  
**DEPARTMENT OF CHEMISTRY**  
**M.Sc – CHEMISTRY (ORGANIC CHEMISTRY)**

**Appendix - I**

Scheme of Instruction and Evaluation for **M.Sc. (Organic Chemistry)** programme for the batch of students admitted during 2021–2022

**Semester – I**

Paper	Title of the Paper	Instruction Hours Per Week			Credits(T+P)	Evaluation		
		L	T	P		CIA MARKS	SEE	
							MARKS	DURATION
Paper-I	General Chemistry	4	1	--	4	30	70	3 hours
Paper-II	Inorganic Chemistry - I	4	1	--	4	30	70	3 hours
Paper-III	Organic Chemistry - I	4	1	--	4	30	70	3 hours
Paper-IV	Physical Chemistry - I	4	1	--	4	30	70	3 hours
Pract-I	Inorganic Chemistry	--	--	6	3	30	70	6 hours
Pract-II	Organic Chemistry	--	--	6	3	30	70	6 hours
	Sub-Total	16	4	12	16+4+12=32			

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru- 521165.

NAAC reaccruited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: GENERAL CHEMISTRY**

**Semester: I**

Course Code	<b>20CH1T1</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-22	Year of Offering: 2021 - 22	Year of Revision: 2021-22	60%

**Course Objective:** The main objective of this paper is to give abasic and updated knowledge for the students on Treatment of analytical data, Titrimetric Analysis, Rotational-Vibration Spectroscopy, Symmetry and Group theory in chemistry.

**Course Outcomes:-**

- CO1:** Recollect the concepts of titrimetric analysis, specific statistical rules, microwave Spectroscopy, rotational vibrational spectroscopy and group theory in chemistry
- CO2:** Identify the role of titrimetric analysis, specific statistical rules, microwave spectroscopy, Rotational vibrational spectroscopy and group theory in chemistry.
- CO3:** Demonstrate knowledge of titrimetric analysis, microwave spectroscopy, rotational Vibrational spectroscopy and group theory in chosen job role.
- CO4:** Test the conceptual knowledge gained in titrimetric analysis, statistical rules / principles, Microwave spectroscopy, rotational vibrational spectroscopy and group theory in chemistry

## Syllabus

### Course Details:-

Unit	Learning Units	Lecture Hours
I	<b>Treatment of analytical data</b> : Classification of errors – Determinate and indeterminate errors –Minimisation of errors – Accuracy and precision – Distribution of random errors – Gaussian distribution – Measures of central tendency – Measures of precision – Standard deviation – Standard error of mean – student's t test – Confidence interval of mean – Testing for significance – Comparison of two means – F – test – Criteria of rejection of an observation – propagation of errors – Significant figures and computation rules – Control charts – Regression analysis – Linear least squares analysis.	12
II	<b>Titrimetric Analysis:</b> Classification of reactions in titrimetric analysis- Primary and secondary standards-Neutralisation titrations- Theory of Neutralization indicators-Mixed indicators- Neutralisation curves- Displacement titrations-Precipitation titrations-Indicators for precipitation titrations-Volhard method-Mohr method- Theory of adsorption indicators- Oxidation reduction titrations-Change of electrode potentials during titration of Fe(II) with Ce(IV)- Detection of end point in redox titrations- Complexometric titrations- Metal ion indicators-Applications of EDTA titrations-Titration of cyanide with silver ion.	12
III	<b>Introduction to Molecular Spectroscopy:</b> Motion of molecules- Degrees of freedom –Energy associates with the degrees of freedom-Type of spectra.  <b>Microwave spectroscopy:</b> Classification of molecules, rigid rotator model, effect of isotopic substitution on the transition frequencies, Intensities non- rigid rotator-Microwave spectra of polyatomic molecules.	12
IV	<b>Rotational Vibrational Spectroscopy:</b> Harmonic oscillator, vibrational energies of diatomic molecules, zero-point energy, force constant and bond strengths, anharmonicity, Morse potential energy diagram. Vibration – rotation spectroscopy. PQR branches, Born–Openheimer approximation, selection rules, normal modes of vibration, group frequencies, overtones, hot bands,applications.	12

V	<b>Symmetry and Group theory in chemistry:</b> Symmetry elements, symmetry operation, definition of group, sub group, relation between order of a finite group and its sub group. GMT tables Abelian and non-abelian groups. Point group. Schonfiles symbols, Find out Point group of a molecule (yes or no Method). Representation of groups by Matrices (representation for the $C_n$ , $C_{nv}$ , $C_{nh}$ , $D_n$ etc. groups to be worked out, explicitly). Character of a representation. The great Orthogonality theorem (without proof) and its importance. Character tables and their use. Construction of Character tables.	12
---	---	----

**Reference Books:**

1. Vogel's text book of quantitative analysis. (3<sup>rd</sup> edition) Addition Wesley Longmann Inc.
2. Quantitative analysis R.A Day and A.L. Underwood. Prentice Hall Pvt. Ltd.
3. Fundamentals of Analytical Chemistry – Skoog and West
4. Instrumental Methods of analysis – B K Sharma.

**Course Focus:** Employability & Entrepreneurship.

A.G.& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE Vuyyuru-  
521165.

NAAC recredited at 'A' level  
*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper:** **INORGANIC CHEMISTRY-I**

**Semester:** **I**

Course Code	<b>20CHIT2</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: 2021-22	Percentage of Revision: 0%

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Quantum Mechanics, Chemistry of non-transition elements, Structure and Bonding, Metal-ligand bonding, Metal-ligand Equilibrium solutions.

**Course Outcomes:-**

After completion of the course, the student will be able to

**CO1:** Memorize the basic concepts of Quantum chemistry, Co-ordination chemistry and Chemical Bonding.

**CO2:** Comprehend the role of basic and advanced concepts of Quantum chemistry, Co-ordination Chemistry and Chemical bonding.

**CO3:** Execute the conceptual knowledge gained in the concepts of Quantum chemistry, Co-ordination Chemistry and Chemical bonding in chosen job role

**CO4 :** Compare and distinguish one concept from the other in inorganic chemistry and in correlation With other chemistries as well

## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Introduction to Exact Quantum Mechanical Results:</b> Schrodinger equation, importance of wave function, Operators, Eigen values and Eigen functions, derivation of wave equation using operator concept. Discussion of solutions of Schrodinger's equation to some model systems viz. particle in one dimensional box (applications), three-dimensional box, Rigid rotator system and the Hydrogen atom. Variation theorem, linear variation principle, perturbation theory (first order and non-degenerate), Application of variation method to the Hydrogen atom</p>	12
II	<p><b>Chemistry of non- transition elements:</b> Halogen oxides and oxyfluorides, Spectral and Magnetic properties of Lanthanides and Actinides. Analytical applications of Lanthanides and Actinides. Synthesis, properties and structure of B-N, S-N, P-N cyclic compounds. Intercalation compounds.</p> <p><b>Metal <math>\pi</math>- complexes:</b> preparation, structure and bonding in Nitrosyl, Dinitrogen and Dioxygen complexes.</p>	12
III	<p><b>Structure and Bonding:</b> <math>p\pi</math>-<math>d\pi</math> bonding, Bent's rule, Non-valence cohesive forces, VSEPR theory. Molecular Orbital theory, Molecular orbitals in triatomic (<math>\text{BeH}_2</math>) molecules and ions (<math>\text{NO}_2^-</math>) and energy level diagrams. Walsh diagrams for linear (<math>\text{BeH}_2</math>) and bent (<math>\text{H}_2\text{O}</math>) molecules</p>	12
IV	<p><b>Metal-ligand bonding:</b> Crystal Field Theory of bonding in transition metal complexes-Splitting of d-orbitals in octahedral, tetrahedral, square planar, Trigonal bipyramidal and Square pyramidal fields.</p> <p>Tetragonal distortions - Jahn-Teller effect. Applications and limitations of CFT. Experimental evidences for covalence in complexes.</p> <p>Molecular Orbital Theory of bonding for Octahedral, tetrahedral and square planar complexes. <math>\pi</math>-bonding and MOT - Effect of <math>\pi</math> - donor and <math>\pi</math> -acceptor ligands on <math>\Delta_o</math>. Experimental evidence for <math>\pi</math> - bonding in complexes</p>	12
V	<p><b>Metal – ligand Equilibria in solutions:</b> Step wise and over all formation constants. Trends in stepwise constants (statistical effect and statistical ratio). Determination of formation constants by Spectrophotometric method (Job's method) and pH metric method (Bjerrum's).</p> <p>Stability correlations - Irwing -William's series. Hard and soft acids and bases (HSAB).</p>	12

**Reference Books:**

1. Inorganic Chemistry Huheey, Harper and Row.
2. Physical methods in inorganic chemistry, R.S. Drago. Affiliated East-West Pvt.Ltd.
3. Concise inorganic chemistry, J. D. Lee, ELBS.
4. Modern Inorganic Chemistry, W. L. Jolly, McGrawHill.
5. Inorganic Chemistry, K. F. Purcell and J. C. Kotz Holt Saunders international.
6. Concepts and methods of inorganic chemistry, B. E. Douglas and D.H.M.C.
7. Daniel, Oxford Press.
8. Introductory quantum mechanics, A. K. Chandra
9. Quantum Chemistry, R. K. Prasad.
10. Inorganic Chemistry, Atkins, ELBS
11. Advanced Inorganic Chemistry, Cotton and Wilkinson, Wiley Eastern
12. Quantum Chemistry, Levine.
13. Text book of Coordination chemistry, K. Soma Sekhar Rao and K.N.K. Vani, Kalyani Publishers.
14. Theoretical Inorganic Chemistry by G.S. Manku, Tata Mc Graw Hill, 2000, reprint.
15. Concise co-ordination chemistry, R. Gopal, Ramalingam, Vikas Publishing, House, 2014.
16. Inorganic Chemistry – Huheey, A. Keiter, L. Keiter, 4<sup>th</sup> edition, Pearson education, Asia.

**Course Focus:** Employability & Entrepreneurship.

A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE Vuyyuru-521165.

NAAC recredited at 'A' level  
*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: ORGANIC CHEMISTRY-I**

**Semester: I**

Course Code	<b>20CH1T3</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: 2021-22	Percentage of Revision: 0%

**Course Objective:** The main objective of this paper is to give abasic and updated knowledge for the students on Quantum Mechanics, Chemistry of non- transition elements, Structure and Bonding, Metal–ligand bonding, Metal–ligand Equilibriain solutions.

**Course Outcomes:**

After completion of the course, the student will be able to:

**CO1:** Recollectthebasicconceptsof aromaticity, reactiveintermediates, addition, eliminationand Substitutionreactions

**CO2:** Explainthebasicandadvancedconceptsof aromaticity, reactiveintermediates,addition, Elimination and substitution reactions.

**CO3:** Solvehighlevelconcepts inorganicchemistrywithconceptualknowledge gained inaromaticity, Reactiveintermediates, addition, eliminationandsubstitutionreactions

**CO4:** Exercisetheknowledgeaboutaromaticity, reactiveintermediates, addition, eliminationand Substitutionreactionsinunderstandingthepropertiesoforganiccompounds.



## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Nature of bonding:</b> Localised and Delocalized, Delocalised chemical bonding conjugation, cross conjugation, hyper conjugation, Tautomerism.</p> <p><b>Aromaticity:</b> Concept of Aromaticity, Aromaticity of five membered, six membered rings - Non benzenoid aromatic compounds:-cyclopropenylcation, Cyclobutadienyldication, cyclopentadienyl anion-tropyllium cation and cyclooctatetraenyl dianion. Homoaromaticity, Anti aromaticity</p>	12
II	<p><b>Reactive intermediates &amp; Reactive Species:</b></p> <p><b>Reactive intermediates:</b> Generation, Structure, Stability, Detection and Reactivity of Carbocations, Carbanions, Free radicals, Carbenes, Nitrenes and Arynes.</p> <p><b>Reactive Species:</b> Generation and reactivity of Electrophiles, Nucleophiles, Dienophiles, Ylids.</p>	12
III	<p><b>Addition Reactions:</b> Additions: Addition to carbon – carbon multiple bonds, HX, X<sub>2</sub>, HOX, stereo chemistry of addition, formation and reaction of epoxides, syn and anti hydroxylation, hydrogenation(catalytic and Non catalytic), synthetic reactions of CO and CN and Cram's rule.</p>	12
IV	<p><b>Eliminations Reactions:</b>Types of elimination (E<sub>1</sub>, E<sub>1cB</sub>, E<sub>2</sub>) reactions, mechanisms, stereochemistry and orientation, Hofmann and Saytzeff's rules, Syn elimination versus anti elimination. Competitions between elimination and substitution. Dehydration, dehydrogenation, dehalogenation, decarboxylative elimination, pyrolytic eliminations.</p>	12
V	<p><b>Substitution Reactions:</b></p> <p><b>Aliphatic Nucleophilic substitutions:</b>The S<sub>N</sub><sup>2</sup>, S<sub>N</sub><sup>1</sup>, mixed S<sub>N</sub><sup>1</sup> and S<sub>N</sub><sup>2</sup> and S<sub>N</sub><sup>i</sup> reactions : Mechanism, effect of structure, nucleophile, leaving group on substitutions. The neighbouring group mechanism, participation by σ and π bonds, anchimeric assistance.</p> <p><b>Aromatic Nucleophilic substitution:</b>The S<sub>N</sub><sup>Ar</sup> (Addition – Elimination), S<sub>N</sub><sup>1</sup>(Ar) mechanisms and benzyne mechanism (Elimination – Addition). Reactivity- effect of substrate structure, leaving group and attacking nucleophile. The Von-Richter, Sommelet – Hauser and Smiles rearrangements.</p>	12

**Reference Books:**

1. Advanced organic chemistry- Reaction, mechanism and structure, Jerry March, John Wiley.
2. Advanced organic chemistry, F.A. Carey and R.J. Sundberg, Springer, New York.
3. A guide book to Mechanism in organic chemistry, Peter Sykes, Longman.
4. Organic chemistry, I.L. Finar, Vol. I & II, Fifth ed. ELBS.
5. Organic chemistry, Hendrickson, Cram and Hammond (McGraw –Hill).
6. Modern organic Reactions, H.O. House, Benjamin.
7. Structure and mechanism in organic chemistry, C.K. Ingold, Cornell University Press.
8. Principles of organic synthesis, R.O.C. Norman and J.M. Coxon, Blakie Academic & Professional.
9. Reaction Mechanism in Organic Chemistry, S.M. Mukherji and S.P. Singh, Macmillan.
10. Basic Principles of Organic Chemistry by J. B. Roberts and M. Caserio.

**Course Focus:** Employability & Entrepreneurship.

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyuru-521165.

NAAC recredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper:** **PHYSICAL CHEMISTRY-I**

**Semester:** **I**

Course Code	<b>20CH1T4</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2020-2021	Year of Offering: 2021 - 22	Year of Revision:2021-22	Percentage of Revision: 20%

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Thermodynamics, Surface phenomena and phase equilibria, Electrochemistry, Chemical kinetics, Potentiometry.

**Course Outcomes:-**

After the completion of the course, Students will be able to

CO1: Recall the basic concepts of thermodynamics ,surfacechemistry, electrochemistry,chemical Kinetics and potentiometry in detail.

CO2:Apply the spontaneous and nonspontaneous reaction and derive various thermodynamic and Chemical kinetic derivations.

CO3:Describe the physical significance of thermodynamics,chemicalkinetics and electrochemistry in Explaining the chemical properties, reactivity of molecules.

CO4:Analyse the important techniques of surfaces with the help of ESCA,Auger electronspectroscopy and potentiometric techniques of complexometric, neutralization, oxidation and reduction Titrations.

## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Thermodynamics - I</b> Classical thermodynamics - Brief review of first and second laws of thermodynamics - Entropy change in reversible and irreversible processes - Entropy of mixing of ideal gases - Entropy and disorder – Free energy functions - Gibbs-Helmholtz equation - Maxwell partial relations - Conditions of equilibrium and spontaneity - Free energy changes in chemical reactions: Van't Hoff reaction isotherm - Van't Hoff equation - Clausius Clapeyron equation - partial molar quantities - Chemical potential - Gibbs- Duhem equation - partial molar volume - determination of partial molar quantities - Fugacity - Determination of fugacity - Thermodynamic derivation of Raoult's law..</p>	12
II	<p><b>Surface phenomena and phase equilibria</b> - Surface tension - capillary action - pressure difference - across curved surface (young - Laplace equation) - Vapour pressure of small droplets (Kelvin equation) - Gibbs-Adsorption equation - BET equation - Estimation of surface area - catalytic activity of surfaces – ESCA , X- ray fluorescence and Auger electron spectroscopy.</p> <p><b>Surface active agents</b> - classification of surface active agents - Micellization - critical Micelle concentration (CMC) - factors affecting the CMC of surfactants, microemulsions - reverse micelles - Hydrophobic interaction.</p>	12
III	<p><b>Electrochemistry – I</b> - Electrochemical cells - Measurement of EMF - Nernst equation – Equilibrium constant from EMF Data - pH and EMF data - concentration cells with and without transference – Liquid junction potential and its determination - Activity and activity coefficients - Determination by EMF Method - Determination of solubility product from EMF measurements. Debye Huckel limiting law and its verification. Effect of dilution on equivalent conductance of electrolytes - Anomalous behaviour of strong electrolytes. Debye Huckel-Onsagar equation - verification and limitations, conductometric titrations.</p>	12
IV	<p><b>Chemical kinetics</b>- Methods of deriving rate laws - complex reactions - Rate expressions for opposing, parallel and consecutive reactions involving unimolecular steps. Theories of reaction rates -collision theory - Steric factor - Activated complex theory - Thermodynamic aspects – Unimolecular reactions</p> <p>- Lindemann's theory - Lindemann-Hinshelwood theory. Reactions in solutions - Influence of solvent - Primary and secondary salt effects - Elementary account of linear free energy relationships - Hammet-Taft equation - Chain reactions - Rate laws of H<sub>2</sub>-Br<sub>2</sub>, photochemical reaction of H<sub>2</sub></p> <p>- Cl<sub>2</sub>, Decomposition of acetaldehyde and ethane - Rice-Herzfeld mechanism.</p>	12

V	<b>Potentiometry:</b> Advantages of potentiometric methods - Reference electrode - Standard hydrogen electrode .Acid- alkali or Neutralisation titration, Oxidation – reduction titrations, Precipitation titrations, complexometric titrations, Methods of end point location (Graphical, Differentiation method, Pinkhof- Treadwell method). Calomel electrode -Indicator electrodes: Metal-metal ion electrodes - Inert electrodes -Membrane electrodes - theory of glass membrane potential - Direct potentiometry, potentiometric titrations - Applications.	12
---	---	----

**Reference Books:**

1. Physical Chemistry, G.K. Vemulapalli (Prentice Hall of India).
2. Physical chemistry, P.W. Atkins. ELBS
3. Chemical kinetics - K.J. Laidler, McGraw Hill Pub.
4. Textbook of Physical Chemistry, Samuel Glasstone, Macmillan pub.
5. Polymer Science, Gowriker, Viswanadham, Sreedhar
7. Elements of Nuclear Science, H.J. Arniker, Wiley Eastern Limited.
8. Quantitative Analysis, A.I. Vogel, Addison Wesley Longman Inc.
9. Physical Chemistry - G.W. Castellan, Narosa Publishing House, Prentice Hall
10. Physical Chemistry, W.J. Moore, Prentice Hall
11. Polymer Chemistry – Billmeyer

**Course Focus:** Employability & Entrepreneurship.

**A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru-521165.

NAAC recredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: Practical – I – Inorganic Chemistry (20CH1L1)**

**Semester: I**

S.No	COURSE OUTCOMES	PO'S
	After completion of the course, the student will be able to :	
1	Memorize the basic principles involved in quantitative and qualitative inorganic analysis.	1,7
2	Understand the importance of inorganic qualitative and quantitative analysis and their use in research and industry.	2,6
3	Apply the procedures of quantitative analysis and tests for identification of cations and anions in chosen field.	1,5
4	Evaluate how far these methods are accurate in quantitative determination.	1,4

List of experiments:

1. Preparation of Potassium trisoxalato ferrate(III).
2. Preparation of Tris thiourea copper (I) sulphate.
3. Preparation of Cis and trans potassium diaquodioxalato chromate(III).
4. Preparation of Hexa ammine cobalt (III) chloride.
5. Determination of  $Zn^{2+}$  with potassium ferrocyanide.
6. Determination of  $Mg^{2+}$  using EDTA.
7. Determination of  $Ni^{2+}$  using EDTA.
8. Determination of hardness of water using EDTA.
9. Gravimetric determination of nickel using dimethylglyoxime.

10. Gravimetric determination of Zn using diammonium hydrogenphosphate.

11. Semi micro qualitative analysis of six radical mixtures

(One interfering anion and one less familiar cation for each mixture)

(minimum three mixtures).

Anions:  $S^{2-}$ ,  $SO_3^{2-}$ ,  $Cl^-$ ,  $Br^-$ ,  $I^-$ ,  $NO_3^-$ ,  $SO_4^{2-}$ ,  $CH_3COO^-$ ,  $CO_3^{2-}$ ,  $C_2H_3O_2^-$ ,  $PO_4^{3-}$ ,  $CrO_4^{2-}$ ,  $BO_3^{3-}$

Cations: Ammonium ( $NH_4^+$ )

1st group:  $Ag^+$ ,  $Pb^{+2}$ ,  $W^{+6}$

2nd group:  $Pb^{+2}$ ,  $Bi^{+3}$ ,  $Cu^{+2}$ ,  $Cd^{+2}$ ,  $Sn^{+2}$ ,  $Sn^{+4}$ ,  $Mo^{+6}$ .

3rd group:  $Fe^{+2}$ ,  $Fe^{+3}$ ,  $Al^{+3}$ ,  $Cr^{+3}$ ,  $Ce^{+4}$ ,  $Th^{+4}$ ,  $Zr^{+4}$ ,  $VO^{+2}$ ,  $Be^{+2}$ .

4th group:  $Zn^{+2}$ ,  $Mn^{+2}$ ,  $Co^{+2}$ ,

$Ni^{+2}$ . 5th group:  $Ca^{+2}$ ,  $Ba^{+2}$ ,  $Sr^{+2}$ .

6th group:  $Mg^{+2}$ ,  $K^+$ ,  $Li^+$ .

**A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru-521165.

NAAC re accredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: Organic Chemistry (20CH1L2)**

**Semester: I**

S.No	COURSE OUTCOMES	PO'S
	After completion of the course, the student will be able to :	
1	Understand the importance of organic compounds synthesis and separation and their research and industry.	2,5,6
2	Understand the mechanisms for the synthesis of organic compounds in different steps.	1,7
3	Apply the procedure of synthesis and separation of organic compounds in required field.	1,5,7
4	Interpret the role of separation of organic compounds and synthesis in the core areas of research.	1,5,6

**List of experiments:**

1. Separation of Binary mixtures of Carboxylic acid + Neutral organic compounds (Solvent extraction method).
2. Separation of Binary mixtures of Basic nature + Neutral organic compounds (Solvent Extraction method).
3. Separation of Binary mixtures of Phenolic compounds + Neutral organic compounds (Solvent extraction method).
4. Preparation of Phthalimide from Phthalic anhydride – High Temperature.
5. Preparation of p-nitro acetanilide – Low temperature.
6. Preparation of Iodoform – Room temperature.



7. Paper chromatography - separate the given mixture of sugars.
8. Paper chromatography - separate the given mixture of amino acids.
9. Thin layer chromatography - separate the given mixture of phenols
10. Thin layer chromatography - separate the given mixture of 2,4-DNP derivatives of carbonyl compounds.

**Text books/ Reference books:**

1. A.I. Vogel, "A Text Book of Practical Organic Chemistry", Longman
2. A.I. Vogel, "Elementary Practical Organic Chemistry", Longman
3. F.G. Mann and B.C. Saunders, "Practical Organic Chemistry", Longman
4. Reaction and Synthesis in Organic Laboratory, B.S. Furniss, A.J. Hannaford, Tatchell, University Science Books mills valley.
5. Purification of Laboratory chemicals, manual, W.L.F. Armarego EDD Perrin
6. Reaction and Synthesis in Organic Chemistry Laboratory, Lutz-Friedjan-Tietze, Theophil Eicher, University Science Book.

**A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru-521165.

NAAC recredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**M.Sc. DEGREE EXAMINATION**

**FIRST SEMESTER**

Paper-I :: General Chemistry - I

**Time: 3 hours**

**Maximum Marks: 70**

---

**SECTION – A**

Answer all the questions. Each question carries 2 marks. (10x2=20M)

1. Discuss the role of control charts in large scale production. (CO-2)
2. What are the measures of accuracy? (CO-1)
3. Explain the terms primary & secondary standards in titrimetric analysis. (CO-2)
4. Enumerate the significance of mixed indicators. (CO-2)
5. Give an account on classification of molecules in microwave spectroscopy. (CO-2)
6. Write a short note on degrees of freedom. (CO-2)
7. What are hot bands? (CO-1)
8. Define zero point energy and discuss its significance. (CO-2)
9. List out the possible symmetry elements and write the point group of the molecule HCHO. (CO-3)
10. Define a class. Explain with an example. (CO-2)

**SECTION – B**

**(10x5=50M)**

**UNIT - I**

11. a) Write notes on determinate errors. (CO-2)
- (Or)**
- b)(i) What are the criteria for rejection of an observation? (CO-2)
- (ii) Write notes on significant figures and computational rules. (CO-2)

UNIT – II

12. a) Explain the theory of neutralization indicators. (CO-2)

(Or)

b) Describe the Volhard & Mohr method in precipitation titrations. (CO-2)

UNIT – III

13. a) Explain the electromagnetic spectrum and discuss the interaction of electromagnetic radiation with matter. (CO-2)

(Or)

b) Discuss the applications of microwave spectroscopy. (CO-3)

UNIT - IV

Elaborate the formation of PQR branches in vibrational rotational spectrum. (CO-3)

(Or)

b) What is Born – oppenheimer approximation? How a break down in approximation occurs? (CO-2)

UNIT - V

15.a) Enumerate the role of group theory in IR & Raman spectroscopy. (CO-3)

(Or)

b) Explain the construction of  $C_{2v}$  character table. (CO-2)

\*\*\*\*\*

**M.Sc. DEGREE EXAMINATION**

**FIRST SEMESTER**

Paper-II :: Inorganic Chemistry - I

**Time:3hours**

**Maximum Marks:70**

**SECTION – A**

Answer all the questions. Each question carries 2 marks. (10x2=20M)

1. Explain the significance of approximation methods. (CO -2)
2. Define operator. Explain the significance of operators in quantum mechanics. (CO -2)
3. Discuss about Intercalation compounds. (CO -1)
4. Enumerate the significance of natural oxygen carriers. (CO -2)
5. Explain the role of VSEPR theory in predicting the geometry of molecule. (CO -2)
6. Give an account on important features of MO theory. (CO -2)
7. Explain the splitting of d-orbitals in square pyramidal crystal field. (CO -2)
8. Discuss the drawbacks of valence bond theory. (CO -1)
9. Derive a relation between stepwise and overall formation constants. (CO -3)
10. What is chelate effect? Explain with an example. (CO -2)

**SECTION – B**

**(10x5=50M)**

**UNIT - I**

11.a) Write down the wave equation for rigid rotor and solve it to get eigen functions. (CO-3)

**(Or)**

b) Arrive at the expression for first order correction of eigen values in perturbation method. (CO -3)

**UNIT – II**

12. a) Write an account on phosphorus-nitrogen cyclic compounds. (CO -2)

**(Or)**

b) Explain the structure and bonding in nitrosyl complexes. (CO -2)

UNIT – III

13. a) Draw and explain the molecular orbital energy level diagram for BeH<sub>2</sub> molecule. (CO-3)

(Or)

b) Explain the evidences for  $p\pi - d\pi$  bonding in non-transition metal compounds. (CO-4)

UNIT - IV

14. a) Discuss tetragonal distortion in an octahedral complex with a suitable example. (CO -3)

(Or)

b) Why CN<sup>-</sup> and CO cause greater crystal field splitting and I<sup>-</sup> and Br<sup>-</sup> cause lesser crystal

field splitting? Explain.

(CO -4)

UNIT - V

15. a) Describe the spectrophotometric method for the determination of stability Constant.

(CO -3)

(Or)

b) Give a detailed account on HSAB theory.

(CO -2)

\*\*\*\*\*

**M.Sc. DEGREE EXAMINATION**

**FIRST SEMESTER**

Paper-III :: Organic Chemistry - I

**Time:3hours**

**Maximum Marks:70**

---

**SECTION – A**

Answer all the questions. Each question carries 2 marks. (10x2=20M)

1. Explain anti aromaticity with example. (CO - 1)
2. Explain cross conjugation with example. (CO - 2)
3. Explain the structure of nitrenes. (CO - 1)
4. Discuss the structure of carbenes (CO - 1)
5. Discuss Cram's rule with suitable examples. (CO - 2)
6. Write notes on epoxidation. (CO - 2)
7. Define Hoffmann's rule. Give suitable examples. (CO - 2)
8. Discuss syn elimination versus anti elimination. (CO - 2)
9. Give mechanism of Von-Richter rearrangement. (CO - 2)
10. Write notes on S<sub>N</sub>i mechanism. (CO - 1)

**SECTION – B**

**(10x5=50M)**

**UNIT - I**

11. a) Define delocalized chemical bonding. What are different types of delocalized chemical bonding. (CO - 2)

**(Or)**

- b) Explain the following terms (i) Cross Conjugation (ii) Hyper Conjugation. (CO - 2)

**UNIT - II**

12. a) Discuss the generation, stability and reactivity of carbocations. (CO - 3)

**(Or)**

- b) Explain synthesis and few reactions of the following

- (i) Free radicals (ii) Carbanions (CO - 2)

UNIT - III

13. a) Give an account of the addition of the following to carbon carbon multiple bonds (i)

HX (ii)HOX (CO - 2)

(Or)

b) Discuss in detail about the following

(i) Syn and Anti hydroxylation (ii) Hydrogenation (CO -1)

UNIT – IV

14. a) Discuss pyrolytic eliminations and its orientation. (CO -1)

(Or)

b) Write a detailed account of E1CB mechanism. (CO -1)

UNIT – V

15. a) What is anchimeric assistance. Discuss neighbouring group participation by

$\sigma$  and  $\pi$  bonds. (CO -2)

(Or)

b) Explain the following (i) Benzyne mechanism (ii)  $S_N^Ar$  mechanism. (CO -2)

\*\*\*\*\*

**M.Sc. DEGREE EXAMINATION**

**FIRST SEMESTER**

Paper-IV :: Physical Chemistry - I

**Time:3hours**

**Maximum Marks:70**

**SECTION – A**

Answer all the questions. Each question carries 2 marks.

**(10x2=20M)**

1. Explain the second law of thermodynamics. (CO-2)
2. Write the Gibbs Duham equation and describe all the terms present. (CO-2)
3. Discuss briefly the surface active agents. (CO-2)
4. Explain the microemulsions in brief. (CO-2)
5. Write the Nernst equation and describe all the terms present in it. (CO-2)
6. Explain the principle in conductometric titrations. (CO-2)
7. Write the mechanism in Lindemann's theory of unimolecular reactions. (CO-2)
8. Describe the mechanism in decomposition of Acetaldehyde. (CO-3)
9. Describe the advantages of potentiometric methods over classical methods. (CO-3)
10. Explain the calomel electrode in short. (CO-2)

**SECTION-B**

**(10x5=50M)**

**UNIT - I**

11. a) Derive the Maxwell's thermodynamic relations. (CO-3)

**(Or)**

- b) What is fugacity? Give its physical significance. Describe the different methods of determination of fugacity. (CO-3)

**UNIT - II**

12. a) Discuss the theory involved in ESCA. How are these techniques used in the analysis of surfaces? (CO-2)

**(Or)**

- b) What is CMC? How is it determined? What are the factors affecting CMC? (CO-2)



UNIT - III

13.a) What is activity? How is activity coefficient determined from EMF? (CO-2)

(Or)

b) What is the effect of dilution on equivalent conductance of electrolytes? (CO-2)

UNIT - IV

14.a) Discuss the kinetics of consecutive reactions. (CO-2)

(Or)

b) Discuss the kinetics of  $H_2 - Br_2$  reaction in detail. (CO-3)

UNIT - V

15.a) Explain the theory of precipitation titrations in detail. (CO-2)

(Or)

b) Discuss the potentiometric titrations in detail. (CO-2)

\*\*\*\*\*

**A.G.& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

**DEPARTMENT OF CHEMISTRY**

**M.Sc – CHEMISTRY (ORGANIC CHEMISTRY)**

CIA Practicals

Total Marks – 30 M

\*\*\*\*\*

**M.Sc. DEGREE EXAMINATION**

External Practical Model Paper

**Time:6hours**

**Maximum Marks:70**

---

1. To write the principle and procedure / mechanism related to practical as listed in the practical syllabus – 5M
2. Record – 10M
3. Experiment (Procedure / Tabulation / calculation etc.,) – 50M
4. Result / Graphs / Yield/Report – 5 M

\*\*\*\*\*

**A.G. & S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**  
**(Autonomous)**  
**DEPARTMENT OF CHEMISTRY**  
**M.Sc – CHEMISTRY (ORGANIC CHEMISTRY)**

**Appendix - I**

Scheme of Instruction and Evaluation for **M.Sc. (Organic Chemistry)** programme for the batch of students admitted during 2020–2021

**Semester – III**

Paper	Title of the Paper	Instruction Hours Per Week			Credits(T+P)	Evaluation		
		L	T	P		CIA MARKS	SEE	
							MARKS	DURATION
Paper-I	Advanced Organic Spectroscopy	4	1	--	4	30	70	3 hours
Paper-II	Organic Reactions & Mechanisms	4	1	--	4	30	70	3 hours
Paper-III	Organic Synthesis	4	1	--	4	30	70	3 hours
Paper-IV	Chemistry of Natural Products	4	1	--	4	30	70	3 hours
Paper-V	Open Elective- (Polymer Chemistry)	4	--	--	4			
Pract-I	Organic Preparations	--	--	6	3	30	70	6 hours
Pract-II	Mixture Analysis	--	--	6	3	30	70	6 hours
	Sub-Total	20	4	12	20+4+12=36			

**A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru- 521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: ADVANCED ORGANIC SPECTROSCOPY**

**Semester: III**

Course Code	<b>20CH3T1</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: ----	Percentage of Revision: 0%

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Proton & <sup>13</sup>C NMR Spectroscopy, Structural Elucidation of Organic compounds Using UV, IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, 2D NMR spectroscopy and Optical Rotatory Dispersion (ORD) & CD spectroscopy.

**Course Outcomes:-**

**CO1:** Summarize the principle, theory and advanced aspects of <sup>1</sup>H NMR, <sup>13</sup>C NMR, 2D NMR, ORD & CD spectroscopic techniques.

**CO2:** Display the knowledge gained in the areas of <sup>1</sup>H NMR, <sup>13</sup>C NMR, 2D NMR, ORD & CD Spectroscopic techniques in chosen job role.

**CO3:** Interpret the spectral data of <sup>1</sup>H NMR, <sup>13</sup>C NMR, 2D NMR, ORD & CD in elucidating the Structure of the molecule.

**CO4:** Assess how far the spectral data of <sup>1</sup>H NMR, <sup>13</sup>C NMR, 2D NMR, ORD & CD are useful in establishing the structure of the molecule.

## Syllabus

### Course Details:-

Unit	Learning Units	Lecture Hours
I	<b>Proton NMR Spectroscopy:</b> Determination of structure of organic compounds using PMR data. Spin system, Nomenclature of spin system, spin system of simple and complex PMR spectrum (Study of AB – A2 – AB2. ABX – ABC – AMX interactions) Simplification of complex spectra- nuclear magnetic double resonance, chemical shift reagents, solvent effects on PMR Spectrum . Nuclear Overhauser Effect (NOE).	12
II	<b><sup>13</sup>C-NMR spectroscopy:</b> Similarities and Difference between PMR and CMR-CMR recording techniques -BBC-BBD-SFORD-Gate pulse CMR spectrum. General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic and carbonylcarbon), coupling constants. Typical examples of CMR spectroscopy – simple problems.	12
III	<b>ORD &amp; CD Curves:</b> Optical rotatory dispersion : Theory of optical rotatory dispersion – Cotton effect –CD curves-types of ORD and CD curves-similarities and difference between ORD and CD curves. $\alpha$ - Halo keto rule, Octant rule – application in structural studies.	12
IV	<b>2D NMR spectroscopy:</b> Definitions and importance of COSY, DEPT, HOMCOR, HETCOR, INADEQUATE, INDOR, INEPT, NOESY, HOM2DJ, HET2DJ. Study of COSY ,DEPT, HOMCOR, HETCOR, INADEQUATE INDOR INEPT ,NOESY HOM2DJ, HET2DJ, taking simple organic compounds as examples.	12
V	Structural Elucidation of Organic compounds Using UV, IR, <sup>1</sup> H-NMR, <sup>13</sup> C-NMR and Mass spectroscopy.	12

### Reference Books:

1. Introduction to Spectroscopy – D. L. Pavia, G.M. Lampman, G. S. Kriz, 3rdEd. (Harcourt College publishers).
2. Spectrometric identification of organic compounds R. M. Silverstein, F. X. Webster, 6th Ed. John Wiley and Sons.
3. Spectroscopic methods in organic chemistry - D. H. Williams and I Flemming McGraw Hill, 4<sup>th</sup> edition.
4. Absorption spectroscopy of organic molecules – V. M. Parikh
5. Organic structural Spectroscopy- Joseph B. Lambert, Shurvell, Lightner, Cooks, Prentice-Hall (1998).
6. Organic structures from spectra –Field L.D., Kalman J.R. and Sternhell S. 4thEd. John Wiley and sons Ltd.
7. Organic spectroscopy – Principle & Applications – Jag Mohan, Narosa, 2<sup>nd</sup> edition, Publishinghouse.

**Course Focus:** Employability & Entrepreneurship.

**A.G.& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru-521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: ORGANIC REACTIONS & MECHANISMS**

**Semester: III**

Course Code	<b>20CH3T2</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: -----	Percentage of Revision: 0

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Oxidations, Reductions, Molecular Rearrangements, Pericyclic Reactions and Organic Photo Chemistry.

**Course Outcomes:-**

- CO1 :** Acquire sound knowledge of oxidations, reductions, molecular rearrangements, pericyclic reactions and photochemistry.
- CO2 :** Understand the concepts involved in oxidations, reductions, molecular rearrangements, pericyclic reactions and photochemistry.
- CO3 :** Apply the conceptual knowledge gained in oxidations, reductions, molecular rearrangements, pericyclic reactions and photo chemistry in chosen fields.
- CO4 :** Analyse and categorise the various types oxidations, reductions, molecular rearrangements, pericyclic reactions and photo chemistry in a given reactions.

**Syllabus**

**Course Details**

Unit	Learning Units	Lecture Hours
I	<b>Oxidations</b> Definition and types of Oxidations, oxidations with ruthenium tetroxide, NBS, iodobenzene diacetate, Tl(III) nitrate, Chromium (VI) oxidants, Lead tetra acetate, SeO <sub>2</sub> , MnO <sub>2</sub> , Ag <sub>2</sub> CO <sub>3</sub> , Oppenauer oxidation, perhydroxylation using KMnO <sub>4</sub> , OsO <sub>4</sub> , HIO <sub>4</sub> , oxidation with iodine silver carboxylate (Woodward and Prevost conditions), Definition & mechanism of epoxidation by peracids.	12

II	<p><b>Reductions</b></p> <p>Definition and types of reductions, reduction by dissolving metals - Reduction with metal and liquid ammonia (Birch Reduction of aromatic compounds), Reduction with metal acid - Clemensons reduction, Reduction by hydride transfer reagents, Aluminiumalkoxide - MeerweinPondorfVerley Reduction, LiAlH<sub>4</sub>, NaBH<sub>4</sub>, Diisobutylaluminiumhydride(DIBAL), Sodium cyanoborohydride, trialkyl borohydrides, Reduction with diimide, Wolff-Kishnerreduction.</p>	12
III	<p><b>Molecular Rearrangements</b></p> <p>Migration to electron deficient carbon atom. Pinacole-Pinacolone rearrangement, Wagner-Meerwein rearrangement, Dienone-Phenol rearrangement, Benzil-Benzilic acid rearrangement, Favorski rearrangement, ARNDT Eistert rearrangement, Sommelet – Hauser rearrangement.</p> <p>Migration to electron deficient hetero atom: Wolf, Hofmann, Curtius, Lossen, Schmidt, Beckmann rearrangement, Baeyer-Villiger rearrangement, Stevens, Neber rearrangements. Fries, Fischer-Hepp, Orton, Bamberger, Dakin, Cumene Hydroperoxide rearrangement.</p>	12
IV	<p><b>Pericyclic Reactions – I:</b></p> <p>Definition, classification of pericyclic reactions, Molecular Orbital energy level diagrams, electronic configuration in ground and first excited states of Ethylene, 1,3-Butadiene, 1,3,5 – Hexatriene, allyl system, stereo chemical notations – suprafacial, antarafacial, conrotatory and disrotatory modes, Woodward and Hoffmann selection rules.</p> <p><b>Electrocyclic reactions:</b> Mechanism, Stereochemistry of (4n) and (4n+2) <math>\pi</math> systems. PMO, FMO and correlation methods.</p> <p><b>Cyclo additions:</b> Mechanism, stereochemistry of (2+2) and (4+2) <math>\pi</math> systems, PMO, FMO and correlation methods.</p> <p><b>Sigmatropic rearrangements:</b> Classification, mechanism for FMO and PMO approach under thermal and photo chemical conditions. (Detailed treatment of Claisen, Cope rearrangements fluxional molecules, aza-cope rearrangements).</p>	12
V	<p><b>Photochemistry:</b></p> <p>Photochemical processes: Energy transfer, sensitization and quenching. Singlet and triplet states and their reactivity. Photochemistry of olefins – conjugated olefins, Aromatic compounds – isomerisation – additions. Photochemistry of carbonyl compounds – Norrish type I and II reactions – Paterno – Buchi Reaction.</p> <p>Photoreduction, Photochemical rearrangements – Photo Fries rearrangement, Di-<math>\pi</math>-methane rearrangement, Barton reaction.</p>	12



**Reference Books:**

1. Molecular reactions and Photochemistry by Charles Dupey and O. Chapman, PrenticeHall.
2. Reaction mechanism in organic chemistry. 3<sup>rd</sup> edition, S.M.Mukherji&singh.
3. Advanced Organic Chemistry-Reactions, Mechanisms and Structure, Jerry March, John Wiley and sons, 6<sup>th</sup>edition.
4. Advanced Organic Chemistry, F.A. Carey and R.J Sundberg,Plenum.
5. Modern methods of organic synthesis, Cambridge University press, 3<sup>rd</sup> edition,W.Carruthers.
6. Organic Reaction Mechanisms, V.K.Ahluwalia, 4<sup>th</sup> edition,Narosa.
7. Reactions, rearrangements and reagents.S.N.Sanyal,4<sup>th</sup>edition.
8. Organic Photo chemistry and Pericyclic reactions' M.G.AroraAnmol Publications Pvt.Ltd.
9. Fundamentals of Photochemistry by K.K.Rohatgi–Mukherjee New Age internationalpublishers.

**Course Focus:** Employability &Entrepreneurship.

A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC recredited at 'A' level

Autonomous -ISO 9001 – 2015 Certified

Title of the Paper: **ORGANIC SYNTHESIS**

Semester: **III**

Course Code	<b>20CH3T3A</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: -----	Percentage of Revision: 0%

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Formation of C-C single & double bonds, Diels-Alder and related reactions, Retro Synthetic Analysis and Protecting Groups.

**Course Outcomes:**

- CO1 :** Memorize the concepts, principles and theories related to formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis.
- CO2 :** Understand the role and significance of formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis.
- CO3 :** Apply the conceptual knowledge gained in formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis as and when required.
- CO4 :** Analyze the role of various reagents in carrying out the organic reactions like formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis.

**Syllabus**

**Course Details**

Unit	Learning Units	Lecture Hours
I	<b>Formation of carbon-carbon single bonds:</b> Alkylation of relatively acidic methylene groups, alkylation of ketones, enamine and related reactions, umplong (dipole inversion). Allylic alkylation of alkenes, alkylation of $\alpha$ -thiocarbanions- $\alpha$ - selenocarbanions, formation of carbon carbon single bonds by the addition of free radicals to alkenes, synthetic applications of carbenes and carbenoids.	12

II	<p><b>Formation of carbon-carbon double bonds</b></p> <p>Pyrolytic syn elimination reactions sulphoxide-sulphonate rearrangement, synthesis of allyl alcohols, the witting reaction, alkenes from sulphones, decarboxylation of <math>\beta</math>-lactones, alkenes from aryl sulphonyl hydrazones.</p> <p>Stereo selective synthesis of tri and tetra substituted alkenes, oxidative decarboxylation of carboxylic acids, stereospecific synthesis from 1,2-diols, reductive dimerization of carbonyl compounds.</p>	12
III	<p><b>Diels-Alder and related reactions:</b> The dienophile, heterodienophile, oxygen as dienophile, The diene, acyclic dienes, heterodienes, 1,2-dimethylene cycloalkanes, vinyl cycloalkenes, and vinyl arenes, cyclic dienes and furans.</p> <p>Intra molecular Diels –Alder reactions, stereochemistry and mechanism of Diels – Alder reaction, retro Diels – Alder reaction, catalysis by lewis acids, photosensitized Diels- Alder reactions and 1,3-dipolar cycloaddition reactions, the ene reaction.</p>	12
IV	<p><b>Disconnection approach</b></p> <p>Introduction to Retro-synthetic analysis, Disconnection approach with suitable examples, Definitions: FGI, Disconnection, synthons, synthetic equivalent, reagent, target molecule, General strategy: choosing a disconnection, greatest simplification, symmetry, high yielding steps, recognizable starting materials.</p> <p>Chemo, regio and stereo selectivity with examples. One group C-C disconnections-Alcohols, carbonyl compounds, alkene synthesis, two group disconnections: 1,3 – dicarbonyl compounds, <math>\alpha,\beta</math> – unsaturated carbonyl compounds.</p>	12
V	<p><b>Protecting groups:</b></p> <p>Theory and importance of functional group protection and deprotection in organic synthesis:-Protecting agents for the protection of functional groups: Hydroxyl group, Amino group, Carbonyl group and Carboxylic acid group</p> <p>carbon-carbon multiple bonds; chemo- and regioselective protection and deprotection. Illustration of protection and deprotection in organic synthesis.</p>	12

#### Reference Books:

1. Modern methods of Organic synthesis ,W. Carruthers Cambridge Press (3<sup>rd</sup>edition)
2. Principles of Organic synthesis by, ROC Norman, 3<sup>rd</sup> edition, CRCpress.
3. Modern Method of Organic Synthesis ,Carruthers and ColdhamSachinkumar Ghosh, Canbridge New Central Book Agency,1<sup>st</sup>edition.
4. Advances in Organic Reaction mechanism and structure, J. March, 6<sup>th</sup> edition, McGrewHill
5. Organic Synthesis: Ratnakumar, vol – II, NCBA Publications.

**Course Focus:** Employability & Entrepreneurshi

A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE

Vuyyuru-521165.

NAAC reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: CHEMISTRY OF NATURAL PRODUCTS**

**Semester: III**

Course Code	<b>20CH3T4B</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2020-2021	Year of Offering: 2021 - 22	Year of Revision: -----	Percentage of Revision: 0%

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Alkaloids, Terpenoids, Steroids, Flavonoids, Isoflavonoids and Plant pigments.

**Course Outcomes:-**

**CO1 :**Memorize the concepts related to Alkaloids, Terpenoids, Steroids, Flavonoids and Isoflavonoids and Pigments.

**CO2 :**Understand the chemical role of Alkaloids, Terpenoids, Steroids, Flavonoids and Isoflavonoids and Pigments.

**CO3 :**Execute the conceptual knowledge gained in the areas of Alkaloids, Terpenoids, Steroids, Flavonoids and Isoflavonoids and Pigments.

**CO4 :**Analyze the role of methods involved in structure elucidation of Alkaloids, Terpenoids, Steroids, Flavonoids and Isoflavonoids and Pigments.

## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<b>Alkaloids:</b> Introduction, Definition, occurrence, role of alkaloids in plants, classification, isolation and general methods for structural elucidation of alkaloids. Structure elucidation of Morphine, Quinine.	12
II	<b>Terpenoids:</b> Introduction, Definition, nomenclature, classification, isolation, isoprene rule and general methods for structural elucidation of Terpenoids. Structure elucidation of Zingiberene, farnesol.	12
III	<b>Steroids:</b> Introduction, Definition, nomenclature, classification. Occurrence, isolation, physiological action, structure elucidation of Androsterone, Progesterone.	12
IV	<b>Flavonoids and Isoflavonoids:</b> Introduction, Definition, classification, isolation, physiological action, structure elucidation of Kaempferol and Quercetin.	12
V	<b>Pigments:</b> Introduction, classification of natural pigments, introduction and classification of carotenoids, functions of carotenoids in plants and animals, structure and synthesis of $\alpha$ – carotene and $\beta$ – carotene.	12

### Reference Books:

1. Organic Chemistry, Vol:2, I.L.Finar, 5<sup>th</sup> Edition.
2. Chemistry of Natural Products, K.W. Bentley, Oxford AT the Clarendon Press, 1<sup>st</sup> edition.
3. Chemistry of Natural Products by P.S. Kalsi Kalyani Publishers. 1983, low cost university edition.
4. Chemistry and physiology of alkaloids by Manske Vol. I & II, VII, Academic Press Inc., publishers New York, 1<sup>st</sup> edition.

**Course Focus:** Employability & Entrepreneurship.

**A.G. & S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyru-521165 NAAC

reaccredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: POLYMER CHEMISTRY**

**Semester: III**

Course Code	<b>20OECH</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021 - 22	Year of Offering: 2021 - 22	Year of Revision: ----	Percentage of Revision: ----

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Polymer chemistry.

**Course Outcomes:**

**CO1 :** Memorize the concepts related to polymer chemistry

**CO2 :** Understand the concepts of polymer chemistry

**CO3 :** Apply the knowledge gained in polymer chemistry in chosen job role.

**Syllabus**

**Course Details**

Unit	Learning Units	Lecture Hours
I	Introduction, Classification of polymers, Polymerization, chain polymerization, step polymerization, Co polymerization, Free radical chain polymerization, cationic polymerization, anionic polymerization, Polymerization Techniques, Graft and Block Copolymers.	12
II	Polymer Synthesis, Isolation and Purification of polymers, Polymer Fractionation, Molecular weight determination, Molecular weight determination curve, Processing Techniques.	12
III	Polymer Reactions—Introduction, Hydrolysis, Acidolysis, Aminolysis, Hydrogenation, Addition and Substitution Reactions, Cyclisation reactions, Cross-linking Reactions.	12

IV	Polymer Degradation – Definition, Types of Degradation, Thermal Degradation, Mechanical Degradation, Degradation by Ultrasonic Waves, Photodegradation, Degradation by High-Energy Radiation, Oxidative Degradation, Hydrolytic Degradation.	12
V	Plastics, Fibres, Elastomers-Polyethylene, Polystyrene, PolyEsters, PolyAcrylonitrile, Polyurethanes, Polyvinyl Chloride, Polyisoprenes. Resins–Phenol Formaldehyde Resin, Urea Formaldehyde and Melamine–Formaldehyde Resins,Epoxy Polymers, Silicon Polymers.	12

**Reference Books:**

1. Textbook of Polymer Science byFrod,W.Billmayer,
2. An Introduction to Polymer Chemistry byMoore.
3. Polymer Chemistry-An Introduction byM.P.Stevens.
4. Polymer Science –VRGowariker, NVViswanathan,JayadevSreedhar.

**Course Focus :** Employability .

**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru-521165.

NAAC recredited at 'A' level

*Autonomous -ISO 9001 – 2015 Certified*

**Title of the Paper: ORGANIC PREPARATIONS**

**Semester: III**

Course Code	<b>20CH3L1</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: -----	Percentage of Revision:0%

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on organic chemistry practical.

**Course Outcomes:-**

**CO1:** Memorize the principle involved in various organic preparations.

**CO2:** Understand the mechanism involved in organic preparation.

**CO3:** Apply the knowledge of organic preparations in their chosen field.

**Syllabus**

**Course Details:-**

1. Preparation of organic compounds: Three stage preparations by reactions involving nitration, halogenation, oxidation, reduction, alkylation, acylation, condensation and rearrangement. (A student is expected to prepare at least five different organic compounds by making use of the reactions given above).
2. Green Procedures for organic compound preparations (atleast 5preparations).

**Course Focus:** Skill Development & Employability



**A.G.& S.G. SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE**

Vuyyuru- 521165.

NAAC reaccruited at 'A'level

*Autonomous -ISO 9001 – 2015Certified*

**Title of the Paper: Mixture Analysis**

**Semester: III**

Course Code	<b>20CH3L2</b>	Course Delivery Method	Class Room / Blended Mode - Both
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2020-21	Year of Offering: 2021 - 22	Year of Revision: -----	Percentage of Revision: 0 %

**Course Objective:** The main objective of this paper is to give a basic and updated knowledge for the students on Analysis of organic binary mixtures.

**Course Outcomes:-**

**CO1 :**Get familiarized with the tests involved to identification of various functional groups.

**CO2 :**Understand the theory involved in identification and separation of the given organic mixture based on the solubility

**CO3 :**Apply the knowledge to identify various functional groups present in the given organic compound by using a systematic procedure.

**Syllabus**

**Course Details:-**

**Analysis of organic binary mixtures:** Separation and identification of organic binary mixtures (The students must be given training in at least 10 mixtures with different functional groups).

**Note:** For semester end examinations the student has to submit at least two solid derivatives for each individual component.

**Course Focus:** Skill Development & Employability

**M.Sc. DEGREE EXAMINATION  
THIRD SEMESTER  
Paper-I:: ADVANCED ORGANIC SPECTROSCOPY**

**Time:3hours**

**Maximum Marks:70**

**SECTION – A**

Answer all the questions. Each question carries 2 marks. (10x2M=20M)

1. a) Explain the importance of Double irradiation. (CO-1)
- b) Write a short note on nomenclature of spin systems. (CO-1)
- c) Explain the  $\alpha$ ,  $\beta$  &  $\gamma$  effects in  $^{13}\text{C}$  NMR with suitable examples. (CO-1)
- d) Discuss the importance of off resonance decoupling CMR spectrum. (CO-1)
- e) What is Cotton effect? (CO-1)
- f) Predict the sign of cotton effect in 3-methyl cyclohexanone when substituent is in equatorial position. (CO-1)
- g) What information is possible from the COSY experiment? (CO-2)
- h) Discuss about various periods involved in 2D NMR. (CO-1)
- i) Discuss briefly the IR signals for the compound  $\text{C}_6\text{H}_5 - \text{CH}_2 - \text{O} - \text{CO} - \text{CH}_3$ . (CO-2)
- j) Predict the possible number of  $^1\text{H}$  NMR signals for the compound  $\text{CH}_3 - (\text{CO}) - \text{CH}_2 - \text{CH}_3$ . (CO-2)

**SECTION – B**

**(10x5=50M)**

UNIT - I

2. a) Explain the effect of solvent on PMR spectrum. (CO-2)
- (Or)
- b) Differentiate between first order and non first order PMR spectrum with examples. (CO-2)

UNIT – II

3. a) Discuss the importance of BBD & SFORD techniques in  $^{13}\text{C}$  NMR spectroscopy. (CO-2)
- (Or)
- b) A compound of MF  $\text{C}_4\text{H}_{10}$  in its CMR Spectrum show 17.1(q) 67.4(T). Determine the structure of compound by using CMR data. (CO-2)

UNIT – III

4. a) Explain the following i) Axial halo ketone rule ii) Types of optical rotatory dispersion curves. (CO-1)
- (Or)
- b) Explain the applications of Octant rule. (CO-2)

UNIT – IV

5. a) What information about a compound can be obtained from the 2D INADEQUATE experiment? (CO-2)
- b) Discuss the importance of NOESY technique with suitable example. (CO-2)

UNIT – V

6. a) Deduce the structure of the compound consistent with the following data elemental analysis:  
C=32.14% H 5.35% and Cl 62.5% UV: No absorption above 210 nm, IR ( $\text{CCl}_4$ ) 2941, 2265 and 1460  $\text{cm}^{-1}$  PMR  $\delta$  2.72(septet,  $J=6.7$ , 1H), 1.33(doublet,  $J=6.7$ , 6H) (CO-3)
- (Or)
- b) Deduce the structure of the compound consistent with the following data elemental analysis:  
C=32.14% H 5.35% and Cl 62.5% UV: No absorption above 210 nm IR ( $\text{CCl}_4$ ) 2940, 1265 and 690  $\text{cm}^{-1}$  and PMR  $\delta$  3.5(2H, D), 3.3(1H, m) and 1.25(3H, d) (CO-3)

\*\*\*\*\*

**M.Sc. DEGREE EXAMINATION  
THIRD SEMESTER  
Paper-II:: ORGANIC REACTIONS & MECHANISMS**

**Time:3hours**

**Maximum Marks:70**

**SECTION – A**

Answer all the questions. Each question carries 2 marks. (10x2M=20M)

1. a) Discuss oxidations with  $\text{HIO}_4$ . (CO-2)
- b) Define oxidation and discuss the various types of oxidations. (CO-1)
- c) Write notes on reduction with diimide. (CO-1)
- d) Give the definition and mechanism of Clemmenson's reduction. (CO-2)
- e) Discuss Dienone phenol rearrangement. (CO-1)
- f) Write an account of Wolff rearrangement. (CO-2)
- g) What are pericyclic reactions? Give the classification. (CO-1)
- h) Write the molecular orbital energy level diagram for 1,3-Butadiene. (CO-2)
- i) Write notes on energy transfer. (CO-1)
- j) Explain Barton reaction. (CO-2)

**SECTION-B**

**(5x10M=50M)**

UNIT - I

2. a) Explain oxidations with i)  $\text{RuO}_4$  ii)  $\text{SeO}_2$  (CO-3)
- (Or)**
- b) Explain oxidations with i)  $\text{KMnO}_4$  ii)  $\text{MnO}_2$  (CO-3)

UNIT – II

3. a) Discuss Birch reduction of aromatic compounds. (CO-2)
- (Or)**
- b) Discuss the reductions with  $\text{LiAlH}_4$ . (CO-2)

UNIT – III

- 4 a) Explain the following
  - i) Wagner Meerwein rearrangement ii) Benzil – Benzilic acid rearrangement. (CO-2)
  - (Or)**
  - i) Baeyer Villiger rearrangement ii) Cumene hydroperoxide rearrangement. (CO-2)

UNIT - IV

5. a) Apply correlation method to  $4n\pi$  electrocyclic reaction for thermal and photochemical conditions. (CO-3)
- (Or)**
- b) Apply FMO method to 1,5 sigmatropic shift and write Woodward and Hoffmann rules by PMO method. (CO-3)

UNIT - V

- 6 a) Discuss Norrish type – I and type – II reactions. (CO-2)
- (Or)**
- b) Explain the following i) photochemistry of olefins ii) Di –  $\pi$  – methane rearrangement. (CO-2)

\*\*\*\*\*

**M.Sc. DEGREE EXAMINATION  
THIRD SEMESTER  
Paper-III:: ORGANIC SYNTHESIS**

**Time:3hours**

**Maximum Marks:70**

**SECTION – A**

Answer all the questions. Each question carries 2 marks.

(10x2M=20M)

1. a) What are acidic methylene groups? (CO-2)
- b) Explain about carbenes. (CO-1)
- c) Discuss in short about syn elimination. (CO-1)
- d) Elaborate Wittig reaction with an example. (CO-2)
- e) Describe dienophile with an example. (CO-1)
- f) What are Lewis acids? Explain with an example. (CO-2)
- g) Enumerate the significance of Disconnection approach in organic synthesis. (CO-2)
- h) Write a short note on synthon. (CO-1)
- i) Discuss the role of functional group protection & deprotection in organic synthesis. (CO-2)
- j) Explain the importance of regioselective protection. (CO-2)

**SECTION – B**

**(5x10M=50M)**

UNIT - I

2. a) Explain enamine and related reactions. (CO-2)
- (Or)**
- b) Discuss in detail the synthetic applications of carbenes and carbenoids with examples. (CO-2)

UNIT – II

3. a) Write an account of reductive dimerisation of carbonyl compounds with examples. (CO-2)
- (Or)**
- b) Discuss any three methods for the stereoselective synthesis of tri and tetra substituted alkenes. (CO-2)

UNIT – III

4. a) What is Diels Alder reaction? Discuss the mechanism and stereochemistry. (CO-2)
- (Or)**
- b) Write note on 1,3 – dipolar cycloaddition reactions. (CO-2)

UNIT - IV

5. a) Discuss the various methods of disconnection of alcohols. (CO-3)
- (Or)**
- b) Give an account of disconnections of 1,3 – dicarbonyl compounds. (CO-2)

UNIT – V

6. a) Discuss about the protecting agents to protect the following functional groups (CO-3)
- (i) AMINO group      (ii) carboxylic acid.
- (Or)**
- b) List out the reagents and apply them for the protection and deprotection of hydroxyl and carbonyl groups. (CO-3)

\*\*\*\*\*

**M.Sc. DEGREE EXAMINATION  
THIRD SEMESTER  
Paper-IV:: CHEMISTRY OF NATURAL PRODUCTS**

**Time:3hours**

**Maximum Marks:70**

**SECTION – A**

Answer all the questions. Each question carries 2 marks.

(10x2M=20M)

1. a) What are alkaloids? Explain. (CO-2)
- b) Discuss the general classification of alkaloids. (CO-1)
- c) Discuss isoprene rule. (CO-1)
- d) Write the structure of Zingiberine. (CO-2)
- e) Write the synthesis of farnesol. (CO-2)
- f) Discuss the nomenclature of steroids. (CO-1)
- g) Give a short note on classification of flavonoids? (CO-1)
- h) Discuss the isolation of flavonoids and isoflavonoids. (CO-2)
- i) Discuss the classification of natural pigments. (CO-1)
- j) Discuss the functions of carotenoids in plants. (CO-2)

**SECTION – B**

**(10x5=50M)**

UNIT - I

2. a) Outline the synthesis of Morphine. (CO-2)
- (Or)**
- b) Discuss the structure elucidation of Quinine. (CO-3)

UNIT – II

3. a) Explain the structure elucidation of santonin. (CO-2)
- (Or)**
- b) Write notes on structure elucidation of abietic acid. (CO-2)

UNIT – III

4. a) Establish the structure of nucleus and size of the rings A, B, C and D in cholesterol. (CO-3)
- (Or)**
- b) Establish the structure of progesterone and write any one method of synthesis. (CO-3)

UNIT - IV

5. a) Write structure elucidation of kaempferol. (CO-3)
- (Or)**
- b) Write structure elucidation of Quercetin. (CO-3)

UNIT - V

6. a) Discuss the structure elucidation of  $\alpha$ -carotene. (CO-3)
- (Or)**
- b) Discuss the structure elucidation of  $\beta$ -carotene. (CO-3)

\*\*\*\*\*

**M.Sc.**  
**DEGREE EXAMINATION**  
**THIRD SEMESTER**  
**POLYMER CHEMISTRY**

**Time: 3 hours**

**Maximum Marks: 70**

**SECTION – A**

Answer all the questions. Each question carries 2 marks. (10x2M=20M)

1. a) Discuss about classification of polymers. (CO-1)
- b) Explain one polymerization reaction which involves free radical mechanism. (CO-2)
- c) Give a short account on isolation of polymers. (CO-1)
- d) Describe the purification method of polymers. (CO-1)
- e) What is hydrolysis? Explain with an example. (CO-2)
- f) What is cross – linking reaction? Explain its impact. (CO-2)
- g) List out the types of degradation methods. (CO-1)
- h) Explain ultrasonic waves degradation with an example. (CO-2)
- i) What are elastomers? Explain in brief. (CO-2)
- j) Discuss the method for the synthesis of polystyrene. (CO-2)

**SECTION – B**

**(10x5=50M)**

**UNIT - I**

2. a) Explain in detail about cationic polymerization with suitable examples. (CO-2)
- (Or)**
- b) Give a detailed account on Graft and Block copolymers. (CO-2)

**UNIT – II**

3. a) Discuss in detail about molecular weight determination. (CO-2)
- (Or)**
- b) Explain elaborately about various processing techniques. (CO-2)

**UNIT – III**

4. a) Illustrate the following with suitable examples (i) Aminolysis (ii) Cyclisation reactions. (CO-2)
- (Or)**
- b) Write an account on addition & substitution reactions with suitable examples. (CO-2)

**UNIT – IV**

5. a) Describe the following degradation methods with suitable examples  
    (i) Thermal degradation (ii) Photodegradation (CO-2)
- b) Discuss the significance of oxidative degradation and hydrolytic degradation. (CO-2)

**UNIT – V**

6. a) Give an account on the following (i) Polyacrylonitrile (ii) Polyurethanes (CO-2)
- (Or)**
- b) Elaborate the following in detail (i) Epoxy polymers (ii) Silicon polymers (CO-2)

\*\*\*\*\*

**A.G& S.G.SIDDHARTHA DEGREE COLLEGE OF ARTS &  
SCIENCE**

**VUYYURU-521165, KRISHNA Dt., A.P.(Autonomous)**

**Accredited by NAAC with "A" Grade**

**2021-2022**



**DEPARTMENT OF COMMERCE(PG)**

**M.Com**

**MINUTES OF BOARD OF STUDIES**

**ODD SEMESTER**

**29-11-2021**



**AG&SGS DEGREE COLLEGE OF ARTS AND SCIENCE**  
**VIJAYAWADA-10**  
*(An Autonomous college under the jurisdiction of Krishna University)*  
 Reaccredited at the level 'A+' by the NAAC

**DEPARTMENT OF COMMERCE**

Minutes of Board of Studies Meeting (Online) of Department of Commerce for M.Com held on 29/11/2021, Monday at 11.30 AM. The following members were present.

Members Present		
Name of the Member	Role	Signature
<b>Dr. T.Venkateswara Rao</b> HOD Department of Commerce Mobile No: 9848726150/9491737921	Chairman	
<b>Dr. R. Padmaja,</b> Assistant Professor in Business Management, Krishna University, Machilipatnam. Mobile: 9440532444,	University Nominee	
<b>Dr.R. Siva Ram Prasad. Santha Kumari,</b> Professor, Dean Department of Commerce & Business Administration Acharya Nagarjuna University, Nagarjuna Nagar, Guntur Mobile No: 9849856589	Subject Expert	
<b>Prof. Rajesh C Jampala</b> Dean Department of Commerce & Business Management PBS College of Arts & Science, Vijayawada. Mobile No: 9866806069	Subject Expert	
Sai Babu, Vuyyuru	Alumnus	
<b>Sri V.V. Punna Rao</b> General Manager KCP Sugar Pvt., Ltd, Vuyyuru. Mobile No: 9704456972	Industry Expert	
<b>Kum Mohana Krishna</b> Department of Commerce (PG) AG&SGS Degree College of Arts & Science, Vuyyuru	Member	
<b>Y. Swarna Latha</b> Department of Commerce (PG) AG&SGS Degree College of Arts & Science,	Member	
<b>G. Kiran Kumar</b> Department of Commerce (PG) AG&SGS Degree College of Arts & Science, Vuyyuru	Member	



**Agenda for Board of Studies meeting for the  
Master of Commerce (M.Com)  
PG Department of Commerce**

To evaluate and recommend Programme Structure for Master of Commerce program (M.Com) under CBCS for the students admitted in the academic year 2021-22.

1. To explore the possibility of new courses or combination of courses.
2. To assess the potential of the courses against the employment prospects.
3. To assess the compatibility of practical courses with theory courses.
4. To approve the structure of Model Question Papers with COs and levels of Bloom's taxonomy for all courses of I&III semesters of M.Com.
5. To approve the list of examiners and paper setters of all the courses.
6. To approve the course outcomes (COs) for all the courses of I & III (ODD) Semesters of M.Com.
7. Any other matter with the permission of the chair.

### RESOLUTIONS

1. Discussed and recommended the syllabi of I and III semester of M.Com., for the approval of the Academic Council.
2. Discussed and recommended **Dual Specialisation in 1. Accounting & Taxation 2. Banking, Insurance & Finance** for III semester of M.Com., for the approval of the Academic Council.
3. Discussed and recommended to replace the 'Unit-V' of 'Information Technology for Business' by MS Office (Advanced).
4. Discussed and recommended the Elective Paper 'TALLY with GST' with Lab facility.
5. Discussed and recommended the Lab facility for III Semester Students for e-filing, visiting Web-sites to acquire the knowledge about Stock Markets, Mutual Funds etc.
6. Discussed and recommended the Open Elective Paper for Non-commerce Post Graduates 'Basics of Financial Literacy' about Investments and Stock Markets.
- 7.
8. Discussed and recommended the Model Question Papers of I and III Semesters of M.com., for the approval of the Academic Council.
9. Discussed and recommended the guidelines to be followed by the question paper setter of M.com I and III semesters. For the approval of the Academic Council.
10. Discussed and recommended the following teaching and evaluation methods for the approval of Academic Council.

#### Teaching Methods:

Besides the conventional methods of teaching, we use modern technology i.e., using of LCD projector to display on U boards and online teaching etc., for better understanding of concept.

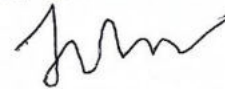
#### Evaluation of student is done by the following procedure:

- i. Out of maximum 100 marks in each paper, 30 marks shall be allocated for internal assessment.
- ii. Out of 30 marks, 20 marks are allocated for announced internal tests. Four announced internal tests will be conducted and average of these Four tests shall be deemed as the marks obtained by the students, out of 10 marks 5 marks are allocated to assignments and seminars and remaining 5 marks are allocated to candidate's percentage of attendance.

#### Semester-End Examinations:

- i. The maximum marks for Semester-End Examinations shall be 70 marks and duration of the examination shall be 3 Hours.
- ii. Semester-End Examinations shall be conducted in theory papers at the end of every Semester.

11. Discussed and recommended for organising National seminars, Guest Lectures, Work-shops to upgrade the knowledge of students, for the approval of the Academic Council.
12. Discussed and empowered the H.O.D. to suggest the panel of paper setters and Examiners to the Controller of Examinations.



CHAIRMAN

**M.Com:****PSOs:**

**PSO1:** To provide an opportunity for graduates to acquire theoretical as well as practical inputs in commerce to enter a career in professional areas of commerce and finance such as taxation, consultancy and financial services.

**PSO2:** To develop advanced theoretical knowledge and research capabilities to able to pursue academic and research focused careers.

**POs:**

**PO1: Business Environment and Domain Knowledge (BEDK):** Economic, legal and social environment of Indian business. Graduates are able to improve their awareness and knowledge about functioning of local and global business environment and society. This helps in recognizing the functioning of businesses, identifying potential business opportunities, evolvment of business enterprises and exploring the entrepreneurial opportunities.

**PO2: Critical thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI):** Competencies in quantitative and qualitative techniques. Graduates are expected to develop skills on analyzing the business data, application of relevant analysis, and problem solving in other functional areas such as marketing, business strategy and human resources.

**PO3: Global Exposure and Cross-Cultural Understanding (GECCU):** Demonstrate a global outlook with the ability to identify aspects of the global business and Cross Cultural Understanding.

**PO4: Social Responsiveness and Ethics (SRE):** Developing responsiveness to contextual social issues/ problems and exploring solutions, understanding business ethics and resolving ethical dilemmas. Graduates are expected to identify the contemporary social problems, exploring the opportunities for social entrepreneurship, designing business solutions and demonstrate ethical standards in organizational decision making. Demonstrate awareness of ethical issues and can distinguish ethical and unethical behaviors.

**PO5: Effective Communication (EC):** Usage of various forms of business communication, supported by effective use of appropriate technology, logical reasoning, articulation of ideas. Graduates are expected to develop effective oral and written communication especially in business applications, with the use of appropriate technology (business presentations, digital communication, social network platforms and so on).

**PO6: Leadership and Teamwork (LT):** Understanding leadership roles at various levels of the organization and leading teams. Graduates are expected to collaborate and lead teams across organizational boundaries and demonstrate leadership qualities, maximize the usage of diverse skills of team members in the related context.

**PO7: Knowledge Application (KA):** Acquire knowledge in different areas of management such as finance, marketing, accounting, human resource and operations and apply

**AG & SG Siddhartha Degree College of Arts & Science (Autonomous), Vuyyuru – 521 165.**

(An autonomous college in the jurisdiction of Krishna University, Machilipatnam)

**M.COM SEMESTER – I  
SYLLABUS**

**CO101: MANAGEMENT THEORY AND PRACTICE**

**Unit–I: Introduction: Management, Concept, Significance, Levels, Skills, Functions and Principles - Management as an Art, Science and Profession – Social responsibilities of business.**

**Unit–II: Planning: Nature, Purpose, Process of Planning, Types of Plans – Premising & Forecasting, Decision Making: Concept, Process, Management By Objectives: Concepts, Process. Advantages and Limitations.**

**Unit–III: Organizing: Process - Formal and Informal Organizations -Departmentation: Methods of departmentation, Span of Control; V.A. Graicuna’s Theory - Factors Determining Span of Control - Delegation: Concept, Process, Advantages and Principles of Effective Delegation; Decentralization: Factors, Advantages and Disadvantages. Line and Staff: Concept- Reasons for Conflicts between Line and Staff and Measures to Overcome; Committees, Types of Committees.**

**Unit–IV: Staffing: Nature and Importance of Staffing, Elements of Staffing. Directing: Meaning, Assumptions of Human Behavior by Douglas McGregor, Edgar Shien and Elton Mayo.**

**Unit–V: Motivation: Significance, Process-Theories of Maslow, Herzberg, Porter and Lawler; Leadership: Trait Approach, Leadership Styles, Managerial Grid; Likert’s Four Systems of Leadership- Communication: Importance, Process, Barriers, Measures to overcome Barriers of an Effective Communication. Controlling: Basis - Control Process, Requirements of adequate Control - Techniques of control, PERT and CPM**

**Suggested Books:**

- Heinz Wihrich., H.Koontz and Markv Cannice, *Management*, 13ed. 2010, Tata McGraw, New Delhi
- Prasad L.M, Principles and Practice of Management, Edition2019, Sultan Chand and Sons, New Delhi.
- Rama Swamy T, Principles of Management. First Ed.,2014, Himalaya Publishing House, Mumbai.

Stoner, J. *Management*, 6th ed., 1995, Pearson Education, New Delhi

**M.COM. DEGREE EXAMINATIONS - First Semester**

**MANAGEMENT THEORY AND PRACTICE**

**(2017-2018 Regulation Onwards)**

**Duration: 3 hours**

**MODEL QUESTION PAPER**

**Maximum Marks: 70**

**SECTION- A**

**1. Answer All Questions**

**5×4=20 Marks**

i. a) Concept of management

OR

b) Sills of management

ii. a) Explain the purpose of Planning

OR

b) Distinguish between the concepts Delegation and Decentralization.

iii. a) Classify the types of Committees.

OR

b) Define Departmentation.

iv. a) Define Staffing.

OR

b) Explain Executive Development Programme

v. a) Show the list of Leadership Traits.

OR

b) Define PERT AND CPM.

**SECTION – B**

**Answer All Questions**

**5×8=40Marks**

**2. a) Explain the Nature and significance of Management.**

**(Or)**

**b) Discuss the functions of Management.**

**3. a) Define MBO. Explain the steps in MBO process.**

**(Or)**

**b) Describe steps in the process of Planning.**

4. a) Examine the methods of Departmentation with merit and limitations of each.

(Or)

b) Define Span of Management. Analyze determining factors that influence span of management.

5. a) Identify the nature and elements of staffing.

(Or)

b) Distinguish between theory X and theory Y proposed by McGregor.

6. a) Examine the motivation theory of Need Hierarchy.

(Or)

b) Define Leadership. Categorize the Styles of leadership

### **SECTION - C**

**Answer the following question.**

**(1 x 10=10 marks)**

7. a) Define Management. Explain the 14 principles of management as given by Henry Fayol.

(Or)

b) Define Communication. Analyze various barriers to effective communication. Suggest Measures to make communication more effective

The Guidelines to be followed by the question paper setters in **MANAGEMENT THEORY AND PRACTICE** for the first semester-end exams

**PAPER TITLE: MANAGEMENT THEORY AND PRACTICE**

PAPER-1

Semester-1

Maximum Marks: 70

Duration: 3 Hours

Weightage for the question paper

Syllabus	Section –A (short answer questions) <b>(with internal choice)</b>	Section- B (Long answer questions) <b>(with internal choice)</b>	Section –C (essay question) <b>(with internal choice)</b>
Unit -1	1  (a or b)	1  (a or b)	Any unit
Unit -2	1  (a or b)	1  (a or b)	
Unit -3	1  (a or b)	1  (a or b)	
Unit -4	1  (a or b)	1  (a or b)	
Unit -5	1  (a or b)	1  (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.



A.G&S.G .Siddhartha Degree College of Arts & Science-Vuyyuru- 521165

List of Paper Setters

Subject Name: <b>Management Theory and Practice</b>	Course: M.Com.	Course Code: CO111	Department: Commerce (PG)
1. Dr.Md.S.Rahaman Associate Professor, Department of Commerce & Business Administration, P.B Siddhartha College of Arts & Science Vijayawada. Mobile No. : 9866965767.	2. Dr. S.Srinivasa Rao, Assistant Professor, Department of Commerce, T.J.P.S.College, Guntur. Mobile No.: 9440887484.		

**M.COM SEMESTER – I**  
**SYLLABUS**

**CO102: BUSINESS ECONOMICS**

**Unit-I: Introduction – Definition, Nature and Scope of Managerial Economics;** Economic Goals of a Business Firm: Profit Maximization Vs Wealth Maximization, Sales Revenue Maximization.

**Unit-II: Consumer Equilibrium under Cardinal and Ordinal Utility - Demand Analysis** – Law of Demand – Demand Function and determinants of Market Demand – Concept of Price, Cross, Income and Promotional Elasticity; their measurement and relevance in Managerial Decision – Making Methods of Demand Forecasting.

**Unit-III: Firm’s Equilibrium – Iso-quant and Iso-cost analysis; Least – Cost Combination of inputs** – The law of Diminishing Marginal Returns in Production – Production Function – Total Product, Marginal and Average Product Curves, their inter – relationships – Cobb – Douglas Production Function and its relevance - Scale and proportion, Cost Functions – Derivation of total, marginal and average cost functions – Long run cost curves

**Unit-IV: Market Structures and their characteristics** – Pricing and output Decisions of firm under different Market structures – Perfect Competition, Pure Monopoly, Oligopoly, Monopolistic / Imperfect Competition under short and long runs. Discriminative Monopoly Regulation of Monopoly through Prices and Taxes.

**Unit-V: Pricing Practices of Firms – Objectives of Pricing Policy** – Approaches to Pricing New Products; Skimming Price, Penetration Pricing, Costs Plus Pricing, Managerial Cost Pricing, Psychological Pricing, Odd Number Pricing, Regulated Pricing, Predatory Pricing

**Suggested Books:**

- Gauvray Datt and Ashwani Mahajan, Indian Economy. 5th Ed, 2015, S Chand and Co, New Delhi.
- Mithani DM, Managerial Economics-Theory and Applications,5th Ed,2010,Himalaya publishing house ,Mumbai.
- Thomas R, Christopher Charles, Maurice, “Managerial Economics: Concepts and .Applications”, 4th 2012, Tata McGraw-Hill, New Delhi..
- Sudip Chaudhuri, Anindya Sen, Economics,19th Ed,2016,Tata Mc Grail Education Pvt Ltd, New Delhi

**MODEL QUESTION PAPER**  
**M.COM. DEGREE EXAMINATIONS**  
**First Semester**  
**BUSINESS ECONOMICS**  
**(2017-2018 Regulation Onwards)**

**Duration: 3 hours**

**Maximum Marks: 70**

**SECTION- A**

**1. Answer All Questions**

**5×4=20 Marks**

i. a) Define Wealth maximization

**OR**

b) Distinguish Business Economics from Managerial Economics.

ii. a) Explain Demand function

**OR**

b) Explain Consumer Equilibrium

iii. a) What is Marginal cost

**OR**

b) Explain Cobb-Douglas production function.

iv. a) Define Perfect competition.

**OR**

b) Define Oligopoly.

v. a) Explain Penetration Pricing.

**OR**

b) Analyse Good value strategy.

**SECTION – B**

**Answer All Questions**

**5×8=40Marks**

**2. a) Define Business economics? Discuss its nature and scope?**

**(OR)**

b) What are the economic goals of a firm?

**3. a) What is the meaning of Demand? What are the determinants of market demand?**

**(OR)**

b) Explain about the income elasticity of demand with some examples?

4. a) Examine the firm's equilibrium using ISOCOST and ISOQUANT Analysis?

(OR)

b) Explain the managerial uses of cost concepts?

5. a) Distinguish between perfect competition and monopolistic competition?

(OR)

b) Explain the features of oligopoly?

6. a) Examine briefly about objectives of pricing policy?

(OR)

b) Outline in detail about cost plus pricing and managerial cost pricing?

**SECTION C - (1 x 10=10 marks)**

**Answer the following question.**

7. a) Discuss how price determined under perfect competitive market?

(OR)

b) Explain the cost output relationships both in short-run and long-run?

The Guidelines to be followed by the question paper setters in BUSINESS ECONOMICS for the first semester-end exams

PAPER TITLE: BUSINESS ECONOMICS

PAPER-2

Semester-1

Maximum Marks: 70

Duration: 3 Hours

Weightage for the question paper

Syllabus	Section –A (short answer questions) (with internal choice)	Section- B (Long answer questions) (with internal choice)	Section –C (essay question) (with internal choice)
Unit -1	1  (a or b)	1  (a or b)	Any unit
Unit -2	1  (a or b)	1  (a or b)	
Unit -3	1  (a or b)	1  (a or b)	
Unit -4	1  (a or b)	1  (a or b)	
Unit -5	1  (a or b)	1  (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

A.G&S.G .Siddhartha Degree College of Arts & Science-Vuyyuru- 521165

List of Paper Setters

Subject Name: Business  
Economics

Course: M.Com

Course Code: CO112

Department:Commerce (PG)

1. Dr.J.Durga Prasad  
Associate Professor,  
Department of Commerce & Business  
Administration,  
P.B Siddhartha College of Arts & Science,  
Vijayawada.  
Mobile No. 9848515628.

2. Dr. K.Sivaji,  
Assistant Professor,  
Department of Commerce & Business &  
Administration,  
T.J.P.S.College,  
Guntur.  
Mobile No.: 9440520219.

**M.COM SEMESTER – I**  
**SYLLABUS**

**CO103: BUSINESS ENVIRONMENT**

**Unit-I: Business Environment:** Components and Significance - Nature of Business Environment - Techniques of Environmental Scanning and Monitoring – **Economic Scope – Cultural, Political, Technological and External Factors Influencing Business Environment – Challenges- Economic systems.**

**Unit-II: Economic Environment of Business:** Significance for Business – Economic Planning – Objectives and Achievements; Government policies – Industrial policy of 1991; Fiscal policy; **Economic Reforms and LPG**

**Unit-III: Political and Legal Environment of Business:** Political Institutions – Legislature, Executive and Judiciary – Changing Dimensions of Legal Environment in India; **Patents Act-1970, SICA-1985, SEZ Act-2005.**

**Unit-IV: Cultural and Technological Environment: Elements of Socio – Cultural Environment; Impact on Business – Social Audit - Technological Environment in India; Technology Transfer – Technology Policy.**

**Unit -V: International and Recent Issues in Environment:** Multinational Corporations; Foreign Collaborations and Indian Business; International Economic Institutions: **WTO, World Bank, IMF and their importance to India;** Foreign Trade Policies.

**Suggested Books**

1. Francis Cherunilam, *Business Environment*, 25<sup>th</sup> revised edition 2017, Himalaya Publishing House, Mumbai.
2. Fernando, A.C., *Business Environment*, 1<sup>st</sup> edition 2011, Pearson, Delhi.
3. Suresh Bedi, *Business Environment*, 1<sup>st</sup> edition 2005, Excel Books, New Delhi,
4. Adhikary.M. *Economic Environment of Business*, 2004, Sultan Chand & Sons, New Delhi.
5. Aswathappa.K. *Essentials of Business Environment*, 12<sup>th</sup> revised edition 2014, Himalaya Publishing, Delhi.
6. Justin Paul, *Business Environment*, Text and Cases, 12<sup>th</sup> edition 2018, Tata McGraw Hill.
7. H.L.Ahuja, “*Economic Environment of Business*”, 13<sup>th</sup> edition 2016, S.Chand, New Delhi.

**MODEL QUESTION PAPER**  
**M.COM. DEGREE EXAMINATIONS**

**First Semester**  
**BUSINESS ENVIRONMENT**  
**(2017-2018 Regulation Onwards)**

**Duration: 3 hours**

**Maximum Marks: 70**

**SECTION- A**

**1. Answer All Questions**

**5×4=20 Marks**

- i. a) Define Concept of Environment (CO1)(L1)  
OR  
b) Explain Business Environment Scanning (CO1)(L2)
- ii. a) Examine the Significance of Economic Environment of Business(CO2) (L4)  
OR  
b) Define LPG (CO2) (L1)
- iii. a) Define Political Institutions (CO3) (L1)  
OR  
b) Define Legal Environment in India (CO3) (L1)
- iv. a) Define Cultural Environment (CO4) (L1)  
OR  
b) Define Technological Policy (CO4) (L1)
- v. a) Define Foreign Collaboration(CO5) (L1)  
OR  
b) Define WTO(CO5) (L1)

**SECTION – B**

***Answer All Questions***

**5×8=40Marks**

2. (a) Define Business Environment? Explain the nature and significance of Business Environment? (CO1) (L1)  
**(OR)**  
(b) Explain various techniques of environmental scanning? (CO1) (L2)
3. (a) What is economic planning? Explain the objectives of present economic plan? (CO2) (L1)  
**(OR)**  
(b) Critically examine the new industrial policy resolutions? (CO2) (L4)



4. (a) Define the political institutions? Explain the role of Government towards Business. (CO3) (L1) (L2)

**(OR)**

(b) Identify the role of SEZ act 2005 in the present context? (CO3) (L3)

5. (a) Explain the elements of socio-cultural elements? (CO4) (L2)

**(OR)**

(b) Discuss the importance of technological environment in India? (CO4) (L6)

6. (a) Define MNC? Explain the scope and importance of MNC? (CO5) (L1)(L2)

**(OR)**

(b) Determine the role of IMF in India? (CO5) (L5)

### **SECTION - C**

**Answer the following question.**

**(1 x 10=10 marks)**

7. (a) Define privatization? Explain the merits and demerits of privatization? (CO3)(L1)(L2)

**(OR)**

(b) Why WTO replaced GATT - Impact of Regional Trading Agreement on WTO?

(CO5) (L1)

The Guidelines to be followed by the question paper setters in BUSINESS ENVIRONMENT for the first semester-end exams

PAPER TITLE: BUSINESS ENVIRONMENT

PAPER-3 Semester-1 Maximum Marks: 70 Duration: 3 Hours

Weightage for the question paper

Syllabus	Section –A (short answer questions) <b>(with internal choice)</b>	Section- B (Long answer questions) <b>(with internal choice)</b>	Section –C (essay question) <b>(with internal choice)</b>
Unit -1	1  (a or b)	1  (a or b)	Any unit
Unit -2	1  (a or b)	1  (a or b)	
Unit -3	1  (a or b)	1  (a or b)	
Unit -4	1  (a or b)	1  (a or b)	
Unit -5	1  (a or b)	1  (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.

A.G&S.G .Siddhartha Degree College of Arts & Science-Vuyyuru- 521165

List of Paper Setters

Subject Name: Business Environment	Course: M.Com	Course Code: CO113	Department:Commerce (PG)
1. Mrs.B.Kalpana Assistant Professor Department of Commerce & Business Administration, P.B Siddhartha College of Arts & Science Vijayawada. Mobile No. 7842669134.	2. Dr.J.Pratap Reddy, Professor, Dept.of Commerce, T.J.P.S.College, Guntur, Mobile: 9440542609.		

**M.COM SEMESTER – I**  
**SYLLABUS**

**CO104: ENTREPRENEURSHIP DEVELOPMENT**

**UNIT-I:**

**Entrepreneur:** Evolution, Characteristics, Types, Functions of Entrepreneur - Factors influencing entrepreneurship - Barriers to entrepreneurship - Growth of Entrepreneurship in India -Women entrepreneurship in India - Role of Entrepreneurship in Economic Development

**UNIT-II:**

**Idea Generation and Opportunity Assessment:** Importance of Ideas in Entrepreneurship - Sources of New Ideas – Techniques for generating ideas- Steps in assessing business potential of an idea- Opportunity Recognition- sources and process- Steps in tapping opportunity.

**UNIT-III:**

**Financing Of Enterprises:** Need for Financial Planning- Sources of finance, Capital Structure, Term-loan, - Sources of Short-Term Finance, Venture capital, Export Finance,- Institutional Finance To Entrepreneurs, - Preparation of Business Plans.

**UNIT-IV:**

**Institution support in small business enterprises:** Introduction – central level institutions- KVIC;SIDO;NSIC ltd; National Productivity Council (NPC); EDII – State level institutions –DIC-SFC-SSIDC-Industry Associations- CII;FICCI;ASSOCHAM.

**UNIT-V:**

**Government Policy and Taxation Benefits :** Government Policy for SSIs- Need for tax benefits-Tax Holiday; Rehabilitation allowance ; Investment allowance ; Tax concessions for SSIs in rural and Rural and backward areas.

**TEXT BOOKS**

1. Osterwalder, Alexander and Yves Pigneur; “Business Model Generation”, John Wiley & Sons, New Jersey, 2012.
2. Roy Rajeev, “Entrepreneurship“ Oxford Latest Edition, 2008

**REFERENCE**

1. Arya Kumar, Entrepreneurship, 1<sup>st</sup> Edition, Pearson, Delhi, 2012.
2. Poornima M. Ch., Entrepreneurship Development- Small Business Enterprises, 1<sup>st</sup> Edition, Pearson, Delhi, 2009
3. Afuah, Allan; “Business Models: A Strategic Management Approach”, 1<sup>st</sup> Edition, McGraw-Hill, New York, 2004.
4. E. Gordon & K. Natarajan “Entrepreneurship Development” 6<sup>th</sup> Revised Edition, Himalaya Publishing house, 2008,

**AG & SG Siddhartha Degree College of Arts & Science (Autonomous), Vuyyuru – 521 165.**  
(An autonomous college in the jurisdiction of Krishna University, Machilipatnam)

**MODEL QUESTION PAPER**  
**M.COM. DEGREE EXAMINATIONS**  
**First Semester**  
**ENTREPRENEURSHIP DEVELOPMENT**  
**(2017-2018 Regulation Onwards)**

**Duration: 3 hours**

**Maximum Marks: 70**

**SECTION- A**

**1. Answer All Questions**

**5×4=20 Marks**

i. a) Distinguish Entrepreneurship Vs. Intrapreneurship.

**OR**

b) Define an Entrepreneur

ii. a) Define the source of Ideas.

**OR**

b) Business Development

iii. a) What do you mean by Working Capital Management ?

**OR**

b) Project appraisal

iv. a) KVIC

**OR**

b) CII

v. a) Meaning of SSIs or

**OR**

b) Explain Tax Holiday

**SECTION – B**

***Answer All Questions***

**5×8=40Marks**

2. a) Explain the importance of entrepreneurship in economic development.

**(Or)**

b) Elaborate the role of women entrepreneurship in India.

3. a) What are the steps in assessing business potential of an idea?

**(Or)**

b) Explain the importance of ideas in entrepreneurship.

4. a) What is meant by Venture Capital? Explain the relevance of Venture Capital finance in Economic Development.

**(Or)**

b) Discover the role of institutional finance in entrepreneurship development.

5. a) Examine the role of SFC in supporting small business enterprises in India.

**(Or)**

b) Evaluate the role of SFC in supporting small business enterprises

6. a) Critically examine the policy of the Govt. towards SSIs.

**(Or)**

b) What are the tax concessions available to SSIs in rural and backward areas?.

#### **SECTION - C**

**Answer the following question.**

**(1 x 10=10 marks)**

7. a) What are the guidelines observed for project report preparation?

**(Or)**

a) Distinguish between management and entrepreneurship.

The Guidelines to be followed by the question paper setters in ENTREPRENEURSHIP DEVELOPMENT for the first semester-end exams

PAPER TITLE: ENTREPRENEURSHIP DEVELOPMENT

PAPER-4 Semester-1 Maximum Marks: 70 Duration: 3 Hours

Weightage for the question paper

Syllabus	Section –A (short answer questions) <b>(with internal choice)</b>	Section- B (Long answer questions) <b>(with internal choice)</b>	Section –C (essay question) <b>(with internal choice)</b>
Unit -1	1  (a or b)	1  (a or b)	Any unit
Unit -2	1  (a or b)	1  (a or b)	
Unit -3	1  (a or b)	1  (a or b)	
Unit -4	1  (a or b)	1  (a or b)	
Unit -5	1  (a or b)	1  (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.

A.G&S.G .Siddhartha Degree College of Arts & Science-Vuyyuru- 521165

List of Paper Setters & External Examiners

Subject Name: Entrepreneurship Development	Course: M.Com	Course Code: CO114	Department:Commerce (PG)
1. Mrs.G.Lalitha Madhavi Assistant Professor Department of Commerce & Business Administration P.B Siddhartha College of Arts & Science Vijayawada. Mobile No.: 7799209460		2. Dr. S.Srinivasa Rao, Assistant Professor, Department of Commerce, T.J.P.S.College, Guntur. Mobile No.: 9440887484.	



**M.COM SEMESTER – I**  
**SYLLABUS**

**CO105: INFORMATION TECHNOLOGY FOR BUSINESS**

**Unit-I: Information Technology (IT) in Business Environment:** Business in the Information Age - Pressures and Responses, Why do we need to know about Information Technology, What is an Information System, Capabilities of Information Systems - Basic concepts of Information Systems, organizations - Structures and IT support - IT support at different organizational levels, Managing IT in organizations

**Unit-II: IT Infrastructure:** Computer Hardware - Input Technologies, Output Technologies - Computer Software - Types of software, general functions of Operating system, Types of application software - Managing organizational Data and Information - Basics of Data arrangement and Access, Traditional file Environment. Databases: Modern Approach, Database Management Systems - Logical Data Models, Data Warehouse. Telecommunications systems and Networks - Network communications software, Internet: Services provided by Internet, World Wide Web, Intranets and Extranets.

**Unit-III: Information Systems to Support Business Functions:** Transaction Processing Systems, Accounting and Finance Systems, Production Management Systems, Human Resources Management Systems, Integrated Information Systems and Enterprise Resource Planning, Inter-organizational/Global Information Systems. Electronic Commerce - Types, Benefits of E- Commerce, Infrastructure and E-commerce support, Legal and ethical issues in E-commerce. Computer-based Supply chain management and IS Integration: IT supply chain support and systems Integration: Enterprise Resource Planning.

**Unit-IV: Data, Knowledge and Decision Support:** Decision making and Decision support systems, Enterprise Decision support, Knowledge Management and Organizational Knowledge bases. Intelligent systems in Business: Expert systems, Intelligent Agents.

**Unit-V: Strategic Advantage and Information Technology:** Strategic Organizations in the Information Age, Business Process Re-engineering, Virtual corporations and Information Technology - Implementing IT: Ethics, Impacts and Society, Ethical Issues, Impact of IT on Organizations and Jobs, on Individuals at Work, Societal Impact and Internet Communities, Protecting Information Systems.

**Reference Books:**

1. V. Rajaraman- Introduction to Information Technology 2<sup>nd</sup> Edition (2013), PHI
2. Turban/Rainer/Potter- Introduction to Information Technology, 3<sup>rd</sup> Edition Willey.
3. Alexis Leon, Mathew Leon, Fundamentals of Information Technology, 2<sup>nd</sup> Edition (2015) LeonVikas.
4. Turban/Volonino/Wood/O.P. Wali - Information Technology for Management,(2015).

**MODEL QUESTION PAPER**  
**M.COM. DEGREE EXAMINATIONS**  
**First Semester**  
**INFORMATION TECHNOLOGY FOR BUSINESS**  
**(2017-2018 Regulation Onwards)**

**Duration: 3 hours**

**Maximum Marks: 70**

**SECTION- A**

**1. Answer All Questions**

**5×4=20 Marks**

- i. a) What are the differences between Information Technology and Information Systems?

**OR**

- b) What are the capabilities of information system?

- ii. a) What are the various input devices of the computers?

**OR**

- b) What are the differences between intranet and extranet

- iii. a) Distinguish integrated information systems

**OR**

- b) What is a human resource management systems

- iv. a) What are the differences between decision making and decision support systems

**OR**

- b) Explain knowledge management bases

- v. a) Explain internet communities.

**OR**

- b) What do you mean by business process re-engineering?

**SECTION – B**

**Answer All Questions**

**5×8=40Marks**

2. a) What is an Information system. Explain the capabilities of Information systems

**(OR)**

- b) Explain about Information Technology in organizations.

3. a) What is an operating system. Explain the general functions of operating systems.

**(OR)**

- b) What are the differences between File based approach and Database Approach.

4. a) Explain the types and benefits of E-commerce.

**(OR)**

b) Explain briefly about computer based supply chain management.

5. a) Explain briefly about the features, benefits and limitations of expert systems.

**(OR)**

b) Explain intelligent agents and how they are used in today business.

6. a) Explain how Information Technology is implemented in organization and its impact on society.

**(OR)**

b) What are the ethical issues involved in implementing Information Technology.

### **SECTION - C**

**Answer the following question.**

**(1 x 10=10 marks)**

7. a) What is DBMS. Explain the architecture and benefits of this system

**(OR)**

b) Explain the societal impacts of Information Technology and different ways of protecting Information Systems

The Guidelines to be followed by the question paper setters in INFORMATION TECHNOLOGY FOR BUSINESS for the first semester-end exams

PAPER TITLE: INFORMATION TECHNOLOGY FOR BUSINESS

PAPER-5 Semester-1 Maximum Marks: 70 Duration: 3 Hours

Weightage for the question paper

Syllabus	Section –A (short answer questions) (with internal choice)	Section- B (Long answer questions) (with internal choice)	Section –C (essay question) (with internal choice)
Unit -1	1  (a or b)	1  (a or b)	Any unit
Unit -2	1  (a or b)	1  (a or b)	
Unit -3	1  (a or b)	1  (a or b)	
Unit -4	1  (a or b)	1  (a or b)	
Unit -5	1  (a or b)	1  (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.

A.G&S.G .Siddhartha Degree College of Arts & Science-Vuyyuru- 521165

List of Paper Setters & External Examiners

Subject Name: Information Technology For Business	Course: M.Com	Course Code: CO115	Department:Commerce (PG)
1. Mrs.K.Sirisha, Lecturer, Department of Commerce & Business Administration, P.B Siddhartha College of Arts & Science Vijayawada. Mobile No.: 7032617871	2. Dr. K.Sivaji, Assistant Professor, Department of Commerce & Business & Administration, T.J.P.S.College, Guntur. Mobile No.: 9440520219		

**AG & SG Siddhartha Degree College of Arts & Science (Autonomous), Vuyyuru – 521 165.**  
(An autonomous college in the jurisdiction of Krishna University, Machilipatnam)

**M.COM SEMESTER – I**  
**SYLLABUS**

**CO106: QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS**

**UNIT-I: Matrices, Differentiation, Permutations and combinations: Matrices –Basic concepts**, Solving system of equations with Cramer’s rule and Inverse method - Differentiation and integration of simple functions and their applications- Permutations and Combinations.

**UNIT-II: Correlation and Regression: Correlation: Types of Correlation** - Simple and Rank Correlation coefficient in the case of two variables- **Regression: Meaning and importance of Regression Analysis.** Estimation of Lines of Regression in the case of two variables.

**UNIT-III: Probability: Concept of Probability: Definitions of Probability,** Addition Theorem of Probability, Conditional Probability and Multiplication theorems of Probability, Baye’s Theorem of Probability and its **Applications.**

**UNIT- IV: Theoretical distributions:** Binomial Distribution, Poisson distribution and Normal distribution – their **Properties and Applications.**

**UNIT-V: Testing of Hypothesis: Concept of Testing of Hypothesis, Types of Errors, Standard deviations and Proportions,** Z- test for Means, T-test, F-test for two variances and Chi-Square test for goodness of fit and independent of Attributes and their Applications – Confidence intervals.

**Suggested Books:**

1. S.C. Gupta.-, Fundamentals of Statistics, 7th Revised Edition (2013) Himalaya Publishing House, New Delhi..
2. Sharma, J.K.-, Fundamentals of Business Statistics, 2nd Edition (2000) Pearson Education, New Delhi..
3. Sancheti, Dc & V.K Kapoor, Business Mathematics, 3<sup>rd</sup> Edition (2014) Sultan Chand & Sons, New Delhi..
4. Arora, P. N., S. Arora- Comprehensive Statistical Methods, 2nd Edition (2007) S. Chand, New Delhi.
5. Sharma, J.K., Quantitative Methods- Theory & Applications, 3<sup>rd</sup> Edition (2010) Macmillan New Delhi.\

**MODEL QUESTION PAPER**  
**M.COM. DEGREE EXAMINATIONS - First Semester**  
**QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS**  
**(2017-2018 Regulation Onwards)**

**Duration: 3 hours**

**Maximum Marks: 70**

**SECTION- A**

**1. Answer All Questions**

**5×4=20 Marks**

i. a) Explain permutations and combinations.

**OR**

b) Distinguish Differentiation from Integration

ii. a) What is correlation and explain different types of correlation?

**OR**

b) What are the properties of regression coefficients?

iii. a) State Addition Theorem of Probability

**OR**

b) Define i) Exhaustive events ii) Equally likely events

iv. a) What is the importance of Poisson distribution?

**OR**

b) What are the properties of Binomial Distribution

v. a) Distinguish between Type-I and Type-II errors

**OR**

b) Explain the procedure for testing of hypothesis

**SECTION – B**

**Answer All Questions**

**5×8=40Marks**

**2.a)** Solve the following Simultaneous Linear Equations by using Cramer's Rule

$$2x+y-Z=3; x+y+z=1; x-2y-3Z=4$$

**OR**

**b)**A company has examined its cost structure and revenue structure and has determined that C the total cost, R total revenue, and x the number of units produced are related as:  $C=100+0.015x^2$  and  $R=3x$   
Find the production rate x that will maximize profits of the company. Find that profit. Find also the profit when  $x=120$ .

**3. a)** Find the Karl Pearson's Coefficient of Correlation from the following data:

Marks in Economics	45	55	56	58	60	65	68	70	75	80	85
Marks in Statistics	56	50	48	60	62	64	65	70	74	82	90

**OR**

b) The following data about the sale and advertisement expenditure of a firm is given below.

	Sales(in Crores of Rupees)	Advertisement Expenditure(in Crores of Rs)
Means	40	6
Standard Deviation	10	1.5

Coefficient of Correlation  $=r=0.9$

- I. Estimate the likely sales for a proposed advertisement expenditure of Rs. 10 Crores.
- II. What should be the advertisement expenditure if the firm proposes a sales target of 60 Crores of Rupees?

4. a) i) A box contains 6 red, 4 white and 5 blue balls. From this box 3 balls are drawn in succession. Find the probability that they are drawn in the order red, white and blue if each ball is i) replaced ii) not replaced

**OR**

b) The contents of urns I, II and III are as follows:

1 white, 2 black and 3 red balls,

2 white, 1 black and 1 red balls, and

4 white, 5 black and 3 red balls

One urn is chosen at random and two balls drawn. They happen to be white and red. What is the probability that they came from urns I, II or III?

5.a) What is Normal Distribution? Explain characteristics and importance of the normal distribution.

**OR**

b) If 5% of the electric bulbs manufactured by a company are defective, use Poisson distribution to find the probability that in a sample of 100 bulbs (i) none is defective, (ii) 5 bulbs will be defective. (Given  $e^{-5}=0.007$ )

6. a) In a sample of 400 parts manufactured by a factory, the number of defective parts was found to be 30. The company, however, claimed that only 5% of their product is defective. Is the claim tenable?

**OR**

b) Two types of batteries are tested for their length of life and the following data are obtained:

	No. of Samples	Mean life in Hours	Variance
Type A:	9	600	121
Type B:	8	640	144

Is there a significance difference in the two means? (Table value=2.131)

### SECTION - C

Answer the following question.

(1 x 10=10 marks)

7.a) From the following data, use  $\chi^2$ -test and conclude whether inoculation is effective in preventing tuberculosis:

	Attacked	Not attacked	Total
Inoculated	31	469	500
Not inoculated	185	1,315	1,500
Total	216	1,784	2,000

**OR**

b) In order to make a survey of the buying habits, two markets A and B are chosen at two different parts of a city. 400 women shoppers are chosen at random in market A. Their average weekly expenditure on food is found to be Rs.250 with a standard deviation of Rs.40. The figures are Rs.220 and Rs.55 respectively in the market B where also 400 women shoppers are chosen at random. Test at 1% level of significance whether the average weekly food expenditures of the two populations of shoppers are equal.



The Guidelines to be followed by the question paper setters in QUANTITATIVE TECHNIQUES FOR BUSINESS for the first semester-end exams

PAPER TITLE: QUANTITATIVE TECHNIQUES FOR BUSINESS

PAPER-6 Semester-1 Maximum Marks: 70 Duration: 3 Hours

Weightage for the question paper

syllabus	Section –A (short answer questions) (with internal choice)	Section- B (Long answer questions) (with internal choice)	Section –C (essay question) (with internal choice)
Unit -1	1  (a or b)	1  (a or b)	Any unit
Unit -2	1  (a or b)	1  (a or b)	
Unit -3	1  (a or b)	1  (a or b)	
Unit -4	1  (a or b)	1  (a or b)	
Unit -5	1  (a or b)	1  (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.

A.G&S.G .Siddhartha Degree College of Arts & Science-Vuyyuru- 521165

List of Paper Setters & External Examiners

Subject Name: Quantitative Techniques for Business Decisions	Course: M.Com	Course Code: CO116	Department: Commerce (PG)
1. Dr.B.Jaya Prakash, Associate Professor, Deputy Head, Department of Commerce & Business Administration P.B Siddhartha College of Arts & Science Vijayawada. Mobile No. 9849813969.		2. Dr.J.Pratap Reddy, Professor, Dept.of Commerce, T.J.P.S.College, Guntur, Mobile: 9440542609.	



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**M. COM (Final Year) III SEM SYLLABUS**

**CO301- FINANCIAL ACCOUNTING AND PACKAGES**

Unit-I: Introduction to Accounting: Concept – Importance and scope – Generally Accepted Accounting Principles – Objectives, Nature and Scope of Financial Accounting. – Cost Accounting – Management accounting.

Unit-II: Preparation of Financial statements: Income statement and Balance sheet – Bank Reconciliation Statement – Inventory valuation and Depreciation.

Unit-III: Financial Analysis: Objectives – Ratio Analysis – Funds Flow & Cash Flow Analysis.

Unit- IV: Management Accounting: Marginal Costing – CVP analysis – Standard costing and Variance analysis.

Unit- V: Accounting Package- Tally (Theory and practical)



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

The Guidelines to be followed by the question paper setters in **CO301- FINANCIAL ACCOUNTING AND PACKAGES** for the third semester-end exams

**PAPER TITLE: CO301- FINANCIAL ACCOUNTING AND PACKAGES**

**PAPER- I                      Semester-III                      Maximum Marks: 70                      Duration: 3 Hours**

Weightage for the question paper

<b>Syllabus</b>	<b>Section –A (Short answer questions) (with internal choice)</b>	<b>Section- B (Long answer questions) (with internal choice)</b>	<b>Section –C (Essay question) (with internal choice)</b>
Unit -1	1 (a or b)	1 (a or b)	Any unit
Unit -2	1 (a or b)	1 (a or b)	
Unit -3	1 (a or b)	1 (a or b)	
Unit -4	1 (a or b)	1 (a or b)	
Unit -5	1 (a or b)	1 (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**MODEL PAPER**

**CO301- FINANCIAL ACCOUNTING AND PACKAGES**

**Section - A (5 x 4 Marks = 20 Marks)**

**Answer the following Questions:**

1. a i. Scope of Financial Accounting  
ii Accounting Cycle.
- b i Bank Reconciliation Statement  
ii Trading Account
- c i Use of Cash inflow  
ii Debt Service coverage ratio.
- d i Benefits of accounting standards  
ii PV ratio.
- e i Uses of Tally  
ii Limitations of Tally.

**Section – B (5 x 8 Marks = 40 Marks)**

**Answer the following Questions:**

2. a. Define Generally Accepted Accounting Principles (GAAP). Discuss the features and utility of GAAP.  
(OR)  
b. Difference between Management and Financial Accounting.
3. a. Explain cash flow and uses of cash inflow.  
(OR)  
b. Compute cash generated from operations during 2012-2013 from the following data.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

Particulars	April 1, 2012	march31, 2013
Sundry debtors	30000	40000
Sundry creditors	48000	30000
Outstanding expenses	3000	6000
Outstanding income	1000	1000
Stock on trade	55000	55000
Prepaid expenses	3000	2000
Accumulated depreciation	50000	60000
(No retirements during the year)		
Provisions for doubtful accounts	1500	2000
Dividends payable	-----	3000
Bills receivable	10000	12000
Bills payable	8000	6000
Net income before tax (as per P&L a/c)	-----	80000

4. a. What are the features of Managerial costing?

(OR)

b. What are the advantages of standard costing?

5. a. The following are the relating to the activities of National traders ltd;

Debtors velocity (months)	-	3
Stock velocity (months)	-	8
Creditors velocity (months)	-	2
Cross profit ratio (%)	-	25

Gross profit for the current year ended December 31 amounts to Rs. 40000. Closing stock of year is Rs. 10000 above the opening stock. Bills receivable amount to Rs. 25000 and bills payable to Rs.10000 find out. I) sundry debtors ii) closing stock iii) sundry creditors.

(OR)

b. Explain about the profit and loss account.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

6. a. Explain the features of accounting software.

(OR)

b. Describe the process of company in Tally.

**Section – C (1x10 Marks = 10 Marks)**

**Answer the following Question:**

7. a. Explain about the standard costing? Advantages and disadvantages of standard costing.

(OR)

b. The trail balance given below, given the adjusting and closing entries and prepare the final a/cs.

Trail Balance			
<u>Debits</u>	Rs	<u>Credits</u>	Rs
Debtors	7580	Capital	8000
Discounts allowed	40	Bad debts received	250
Drawings	600	Bank deposits	2750
Returns inwards	450	Creditors	1250
Rent	360	Returns outwards	350
Salaries	850	Bank overdraft	1570
Travelling expenses	300	Sales	14690
Cash in hand	210	Bills payable	1350
Stock 1 <sup>st</sup> Jan. 2020	2450		
Purchases	11870		
	<u>27460</u>		<u>27460</u>

Adjustments:

1. The closing stock on 31st December 1973 was rs.4200
2. Three months' rent outstanding.
3. Write off rs.80 as bad debts and create a reason for bad debts @5% on sundry debtors.
4. Interest on bank deposit rs.135 credited by the bankers and interest on overdraft rs.157 debited by them in the pass book have not been entered in the books.

==00==



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**CO302 - BUSINESS COMMUNICATION**

Unit-I: Business Correspondence: Significance - Formal, informal and semiformal correspondence – Describing company activities and structures – Describing job responsibilities – Written Correspondence - Differences between formal and informal writings – Use of formal vocabulary and functional language in business letter writing – Planning effective business letters and responses – e-mail writing skills, call taking etiquette/skills.

Unit-II: Business Information: Completing of Forms - Asking appropriate questions to gather information–Polite phrases of confirmation and communication breakdown- understanding native speaking accents and dialects; Functional language used in making verbal agreements — Effective techniques of making and accepting offers – Efficient written offer making and accepting.

Unit-III: Business Presentations: Basic presentation techniques – Use of information in presenting product features – Explaining technical features for simplification; Giving and interpreting numerical data, Business abbreviations and acronyms - Oral and written conventions for expressing numerical information in English.

Unit-IV: Business Reporting: Effective presentation of oral and written instructions – Presenting and describing company information: Vocabulary of describing graphical and numerical information – Summarizing important information concisely

Unit-V: Feedback and Evaluation: Giving feedback to others - Use of questions in self-assessment elicitation – Functional language of agreement/disagreement and opinion giving – good/bad feedback – Motivating others – Use of conditionals to discuss future possibilities – Discourse strategies for effective relationship – team building skills.





**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

The Guidelines to be followed by the question paper setters in **CO302 - BUSINESS COMMUNICATION** for the **third semester-end exams**

**PAPER TITLE: CO302 - BUSINESS COMMUNICATION**

**PAPER- II**

**Semester-III**

**Maximum Marks: 70**

**Duration: 3 Hours**

Weightage for the question paper

<b>Syllabus</b>	<b>Section –A (Short answer questions) (with internal choice)</b>	<b>Section- B (Long answer questions) (with internal choice)</b>	<b>Section –C (Essay question) (with internal choice)</b>
Unit -1	1 (a or b)	1 (a or b)	Any unit
Unit -2	1 (a or b)	1 (a or b)	
Unit -3	1 (a or b)	1 (a or b)	
Unit -4	1 (a or b)	1 (a or b)	
Unit -5	1 (a or b)	1 (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**MODEL PAPER**

**CO302 - BUSINESS COMMUNICATION**

**Section - A (5 x 4 Marks = 20 Marks)**

**Answer the following Questions:**

1. a i. Differences between formal and informal writings  
(OR)
- ii. Written Correspondence
  
- b i. Communication breakdown  
(OR)
- ii. Functional language
  
- c i. Business abbreviations  
(OR)
- ii. Oral and written conventions
  
- d i. Business Reporting  
(OR)
- ii. Graphical and numerical information
  
- e i. Feedback  
(OR)
- ii. Team building

**Section – B (5 x 8 Marks = 40 Marks)**

**Answer the following Questions:**

2. a. Define Business Correspondence and explain its Significance and types  
(OR)
- b. Define a Business Letter. Explain various parts of a Business Letter.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

3. a. Define a Questionnaire. Explain the process of asking appropriate questions to gather information.

(OR)

- b. Explain the concept of Communication Breakdown in detail.

4. a. Define a Business Presentation. Explain various Basic presentation techniques.

(OR)

- b. Explain Oral and written conventions for expressing numerical information in English.

5. a. Explain Effective presentation of oral and written instructions in Business Reporting

(OR)

- b. How to Presenting and describing company information in Business Reporting?

6. a. Explain the Functional language of agreement/disagreement and opinion giving.

(OR)

- b. Explain the Use of conditionals to discuss future possibilities.

**Section – C (1x10 Marks = 10 Marks)**

**Answer the following Question:**

7. a. Define Team Building. Explain the team building skills in detail.

(OR)

- b. Explain the Oral and written conventions for expressing numerical information in English.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**CO303- CORPORATE ACCOUNTING**

Unit - I: Corporate Financial Accounting: Objectives-Scope - Role of Corporate Accountant Analysis and Interpretation of Financial Statements - Inflation Accounting.

Unit - II: Valuation of Shares: Need for Valuation of Shares – Factors Effecting Value of Shares – Methods of Valuation – Impact of Earnings on Share Valuation – Role of Fundamental Analysis and Technical Analysis in Share Valuation – Fair Value of a Share – Buy Back of Equity Shares.

Unit - III: Financial Reporting: Concept, Objectives – Users of Financial Reporting and Specific Purpose of Report – Difficulties in Corporate Reporting– Interim Reporting – Problems – Improving Financial Reporting – Value Added Statements – Disclosure of Value Added Statements – Economic Value Added.

Unit - IV: Consolidated Financial Statements: Definition of Parent or Holding and its Subsidiary – Need for Consolidated Financial Statement – Preparation of Consolidated Balance Sheet of a Holding Company with one Subsidiary – Consolidation of Profit of Loss Account –Consolidated Statement of Changes in Financial Position.

Unit-V: New trends in Accounting: Human Resource Accounting - Environmental Accounting, Social Responsibility Accounting etc.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

The Guidelines to be followed by the question paper setters in **CO303-CORPORATE ACCOUNTING** for the third semester-end exams

**PAPER TITLE: CO303- CORPORATE ACCOUNTING**

**PAPER- III**

**Semester-III**

**Maximum Marks: 70**

**Duration: 3 Hours**

Weightage for the question paper

<b>Syllabus</b>	<b>Section –A (Short answer questions) (with internal choice)</b>	<b>Section- B (Long answer questions) (with internal choice)</b>	<b>Section –C (Essay question) (with internal choice)</b>
Unit -1	1 (a or b)	1 (a or b)	Any unit
Unit -2	1 (a or b)	1 (a or b)	
Unit -3	1 (a or b)	1 (a or b)	
Unit -4	1 (a or b)	1 (a or b)	
Unit -5	1 (a or b)	1 (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**MODEL PAPER**

**CO303- CORPORATE ACCOUNTING**

**Section - A (5 x 4 Marks = 20 Marks)**

**Answer the following Questions:**

1. a i. Objectives of corporate accounting.  
(OR)  
ii. Inflation accounting
  
- b i. Need for valuation of shares.  
(OR)  
ii. Buy back of shares
  
- c i. Concept of financial reporting.  
(OR)  
ii. Economic value added
  
- d i. Holding company  
(OR)  
ii. Needs for consolidated financial statement.
  
- e i. Environmental accounting.  
(OR)  
ii. Social responsibility accounting.

**Section – B (5 x 8 Marks = 40 Marks)**

**Answer the following Questions:**

2. a) Role of corporate accountant.  
(OR)  
b) From the following information prepare common size income statement for the year ended 2019.

Administrative expenses	rs.30000
Selling & distribution expenses	rs.15000
Cost of sales	75% of net sales
Income Tax	20% of net profit before
Net Income after tax	rs.72000
Other Income	rs.15000



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

3. a) Explain the methods of valuation of shares.

(OR)

b) Explain the role of fundamental analysis in the valuation of shares.

4. a) What are the difficulties in corporate reporting?

(OR)

b) Explain the improvement in financial reporting.

5. a) How is consolidated balance sheet prepared?

(OR)

b) A Ltd, acquires all the shares of B ltd on 01-01-2019. From the balance sheet given below prepare a consolidated balance sheet.

Balance sheet as on 31<sup>st</sup> march 2019

Liabilities	A Ltd (rs)	B ltd (rs)	Asset	A ltd (rs)	B ltd (rs)
Share capital:			Land & buildings	200000	135000
Shares of rs.10 each	400000	150000	plant & machinery	80000	40000
Creditors	140000	60000	furniture	25000	10000
Bills payable	15000	10000	investment in shares of		
Reserve on 1-4-15	105000	20000	B ltd	250000	
Profit and loss a/c	25000	15000	stock	65000	30000
			Debtors	40000	30000
			Bank balance	25000	10000
	685000	255000		685000	255000
	685000	255000		685000	255000

6. a) Explain advantages of Human Resource Accounting.

(OR)

b) Explain the nature and objectives of social responsibility accounting.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

Section – C (1x10 Marks = 10 Marks)

Answer the following Question:

7 a) Explain the role of technical analysis in share valuation.

(OR)

b) The balance sheet of Ganesh Ltd as on 31-3-2018 was as under:

Liabilities	Rs	Assets	Rs
2000 equity shares of rs.100 each	200000	Land buildings	125000
General reserve	50000	Machinery	75000
Surplus a/c	25000	Investment at cost	45000
Creditors	45000	(Market value rs. 37500)	
Provisions for taxation	20000	Debtors	50000
Provident fund	17500	Stock	37500
		Cash at bank	25000
	357500		357500

Additional information:

1. Land& building and machinery are valued at rs.137500 and rs.55000 respectively.
2. Of the total debtors. Rs.10000 is bad.
3. Goodwill is to be taken at rs.15000.
4. The normal rate of dividend declared by such type of companies is 15% on the paid up capital.
5. The average rate of dividend declared by such type of companies is 18% on the paid up capital. Calculate the fair value of the equity shares of the company.

==00==





**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**CO304 - DIRECT TAXES**

UNIT -I : Income Tax Act 1961: Basic Concepts, Income, Agriculture Income - Residential Status and Incidence of Tax - Incomes Exempt from Tax u/s 10.

UNIT-II : Heads of Income of Individuals; Salaries- income from house property and gain from business or profession, capital gains.

UNIT-III: Head of income from other sources, clubbing up of income set off and carry forward of losses, deductions from gross total income, computation of total income and tax liability.

UNIT- IV: Assessment of Individuals, Hindu Undivided Families, Firms, Association of Persons, Cooperative Societies and Companies.

UNIT – V: Tax Administration; Income Tax Authorities, Assessment procedure, collection and recovery of tax, refunds, penalties and procedures, appeals and revisions.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

The Guidelines to be followed by the question paper setters in **CO304 - DIRECT TAXES** for the third semester-end exams

**PAPER TITLE: CO304 - DIRECT TAXES**

**PAPER- IV      Semester-III      Maximum Marks: 70      Duration: 3 Hours**

Weightage for the question paper

<b>Syllabus</b>	<b>Section –A (Short answer questions) (with internal choice)</b>	<b>Section- B (Long answer questions) (with internal choice)</b>	<b>Section –C (Essay question) (with internal choice)</b>
Unit -1	1 (a or b)	1 (a or b)	Any unit
Unit -2	1 (a or b)	1 (a or b)	
Unit -3	1 (a or b)	1 (a or b)	
Unit -4	1 (a or b)	1 (a or b)	
Unit -5	1 (a or b)	1 (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**MODEL PAPER**

**CO304 - DIRECT TAXES**

**Section - A (5 x 4 Marks = 20 Marks)**

**Answer the following Questions:**

1. a. i. Agriculture Income  
(OR)  
ii. Residential Status
- b. i. House Rent Allowance (HRA)  
(OR)  
ii. Capital gains
- c. i. Horse races  
(OR)  
ii. Tax liability
- d. i. Association of Persons  
(OR)  
ii. Hindu Undivided Families (HUF)
- e. i. Penalties  
(OR)  
ii. Appeals

**Section – B (5 x 8 Marks = 40 Marks)**

**Answer the following Questions:**

2. a. Explain the basic concepts of IncomeTax.  
(OR)  
b. Define Residential Status. Explain how to compute Tax Liability.
3. a. Define Salary Income. Explain various chargeable Allowances.  
(OR)  
b. Compute the Salary income of Mr. X for the AY 2020-21.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

(i) Basic salary (per month) ` 60,000.

(ii) Dearness allowance = 50% of basic salary.

(iii) Motor car owned by employer given to employee. Entire running expenses are met by the employer and the car is used for both official and personal purpose by the employee. The engine cubic capacity is above 1.6 litres.

(iv) Provident fund contribution of both employer and employee at 15% of basic salary.

(v) Accommodation owned by the employer is given to the employee. A sum of ` 5,000 per month is deducted towards accommodation from the salary of employee.

(vi) Life insurance premium on policy taken by employee paid by the employer during the year ` 45,000.

4. a. How to you compute the income from other sources?

(OR)

b. Define Total Income. Explain the deductions from gross total income.

5. a. Explain the assessment of individuals.

(OR)

b. Mr. Amitabh prepared the following profit and loss account of his cloth shop for the year ended 31st March, 2020. Find out his income from business for the AY 2020-21. Profit and Loss Account (For the year ended 31st March, 2020)

Particulars	Rs.	Particulars	Rs.
Salaries and wages	33,000	Gross Profit	3,34,725
Rent, etc.	1,600	Gifts received from relatives	275
Household expenses	82,000		
Income Tax	900		
Advertisement	800		
Postage expenses	600		
Gifts to relatives	900		
Fire Insurance Premium	400		
Life Insurance Premium	2,100		
Bad Debts Reserve	800		
Audit Fees	400		
Net profit	2,11,500		
Total	3,35,000	Total	3,35,000



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

6. a. Explain the procedure of collection and recovery of tax.

(OR)

b. Explain about the Income Tax Authorities.

Section – C (1x10 Marks = 10 Marks)

Answer the following Question:

7. a. Explain the Incomes Exempt from Tax u/s 10.

(OR)

b. 'X' is a salaried employee in a private sector enterprise in Delhi getting Rs.4,000 per month. He was also provided with a free furnished residence which was hired by the employer at Rs. 3,000 per month. The cost of furnishing was Rs. 50,000. In addition he was allowed free the services of a watchman, a gardener and a sweeper who were paid Rs. 2,400, 2,400 and 1,800 per year respectively by the employer. He earned a capital gain (short -term) of Ks. 10,000 from sale of a plot of land, in 1985 he had incurred a short -term capital loss, out of which Ks. 6,000 was carried forward.

Find his Gross Total Income for the AY 2020-21.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**CO305 - ADVANCED BANKING**

UNIT – I : Central Banking Concept – Central Banking Policy in Developed and Developing Economies – Functions – Note issues – Banker to the Government; Banker to Commercial Banks – Credit Control – Techniques -Structure and Organization of RBI – Role of RBI as Central Bank.

UNIT – II: Structure and Organization of Central Bank in India, USA, UK and EU–Objectives – Central Banking Policy in Developed and Less Developed Countries – A Critical Study of Theory and Practice of Central Banking in India, USA and UK.

UNIT – III: Development of Commercial Banking in UK, USA and India – Study of Nature and Structure of Commercial Banking in India and Abroad – Theories of Asset Management – Commercial Banks, Recent Developments in Commercial Banking in USA, UK and India.

UNIT – IV : Economic Stabilization Policy: Objectives of Monetary Policy – Choosing Between Conflicting Objectives – Monetary and Fiscal Policies and Economic Stabilization – Interdependence of Monetary and Fiscal Policies – Debt Management Policy.

UNIT – V : Emerging Trends – Technological Advancement in Banking Sector –Challenges and Issues – Next Generation Banking.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

The Guidelines to be followed by the question paper setters in **CO305 - ADVANCED BANKING** for the third semester-end exams

**PAPER TITLE: CO305 - ADVANCED BANKING**

**PAPER- V          Semester-III          Maximum Marks: 70          Duration: 3 Hours**

Weightage for the question paper

<b>Syllabus</b>	<b>Section –A (Short answer questions) (with internal choice)</b>	<b>Section- B (Long answer questions) (with internal choice)</b>	<b>Section –C (Essay question) (with internal choice)</b>
Unit -1	1 (a or b)	1 (a or b)	Any unit
Unit -2	1 (a or b)	1 (a or b)	
Unit -3	1 (a or b)	1 (a or b)	
Unit -4	1 (a or b)	1 (a or b)	
Unit -5	1 (a or b)	1 (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**MODEL PAPER**

**CO305 - ADVANCED BANKING**

**Section - A (5 x 4 Marks = 20 Marks)**

**Answer the following Questions:**

1. a) i. Credit control

(OR)

ii. Open market operation

b) i. federal reserve bank

(OR)

ii. Central board.

c) i. Commercial bank

(OR)

ii. Public sector bank

d) i. Economic stability

(OR)

ii. Price stability.

e) i. Home banking

(OR)

ii. IT Revolution

**Section – B (5 x 8 Marks = 40 Marks)**

**Answer the following Questions:**

2. a) What is meant by central bank? Explain the management of central bank in India.

(OR)

b) Techniques of credit control.





**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

3. a) Structure and organisation of central bank of India.

(OR)

b) Objectives of central banking of India and UK.

4. a) Recent Trends in banking sector.

(OR)

b) Explain the Asset Management.

5. a) Fiscal policy types.

(OR)

b) Explain the debt management policy.

6. a) Discuss the next Generation Banking.

(OR)

b) Emerging Trends in banking sector.

**Section – C (1x10 Marks = 10 Marks)**

**Answer the following Question:**

7 a) Discuss about the commercial bank in India.

(OR)

b) Central banking policy in developed and less developed countries.

==00==



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**CO306 - INSURANCE AND RISK MANAGEMENT**

Unit-I : Risk Management process – Risk Identification, Evaluation -Risk Management Techniques, Selecting and Implementing Risk Management Techniques – Types of Risks – Insurance and risk.

Unit-II : Commercial Liability Insurance – Commercial Risk Management Applications – Property –Liability – Commercial Property Insurance, Different policies and contracts – Business Liability and Risk Management – Workers compensation and Risk Financing.

UNIT-III : Property and liability Insurance Coverage – Personal Risk Management Applications–Property –Liability – Risk Management for Auto Owners – Risk Management for Home Owners.

UNIT-IV : Risk Management Applications – Loss of Life – Loss of Health – Retirement Planning and Annuities – Employee Benefits – Financial and Estate Planning.

UNIT-V : Risk Management Scenario- Functions and organisation of Insurers – Government Regulation of Insurance Sector – IRDA – Privatization of Insurance – Changes in Insurance Acts – Insurance Intermediaries – Insurance Product pricing and Claim valuation – Bank Assurance– Foreign Insurers in India.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE**  
**VUYYURU**  
**PG DEPARTMENT OF COMMERCE**

The Guidelines to be followed by the question paper setters in **CO306 - INSURANCE AND RISK MANAGEMENT** for the **third semester-end exams**

**PAPER TITLE: CO306 - INSURANCE AND RISK MANAGEMENT**

**PAPER- VI          Semester-III          Maximum Marks: 70          Duration: 3 Hours**

Weightage for the question paper

<b>Syllabus</b>	<b>Section –A (Short answer questions) (with internal choice)</b>	<b>Section- B (Long answer questions) (with internal choice)</b>	<b>Section –C (Essay question) (with internal choice)</b>
Unit -1	1 (a or b)	1 (a or b)	Any unit
Unit -2	1 (a or b)	1 (a or b)	
Unit -3	1 (a or b)	1 (a or b)	
Unit -4	1 (a or b)	1 (a or b)	
Unit -5	1 (a or b)	1 (a or b)	

- Each short answer question carries 4 marks in section-A.
- Each long answer question carries 8 marks in section-B.
- Each essay answer question carries 10 marks in section-C.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

**MODEL PAPER**

**CO306 - INSURANCE AND RISK MANAGEMENT**

**Section - A (5 x 4 Marks = 20 Marks)**

**Answer the following Questions:**

1. a i. Insurance and Risk  
(OR)  
ii. Types of Risk
  
- b i. Commercial Liability Insurance  
(OR)  
ii. Business Liability Insurance
  
- c i. Property Liability Insurance  
(OR)  
ii. Personal Liability Insurance
  
- d i. Loss of Life  
(OR)  
ii. Loss of Health
  
- e i. IRDA  
(OR)  
ii. Privatisation of Insurance

**Section – B (5 x 8 Marks = 40 Marks)**

**Answer the following Questions:**

2. a. Define Risk and Risk Management. Explain the Risk Management process.  
(OR)  
b. Explain the Techniques of Risk Management.
  
3. a. Explain the various Commercial Risk Management Applications  
(OR)  
b. Explain the concept of Workers compensation.



**AG&SG SIDDHARTHA COLLEGE OF ARTS AND SCIENCE  
VUYYURU  
PG DEPARTMENT OF COMMERCE**

4. a. How does the Property and liability Insurance Covered. Explain in detail.

(OR)

b. Give a detailed note about the Risk Management for Auto Owners.

5. a. Explain the concept of Retirement Planning.

(OR)

b. State the Employee Benefits in detail.

6. a. Explain the various Changes in Insurance Acts.

(OR)

b. Give a detailed note on Foreign Insurers in India.

**Section – C (1x10 Marks = 10 Marks)**

**Answer the following Question:**

7. a. Give a detailed note about Risk Financing.

(OR)

b. Explain the organisation and Functions of Insurers.

**AG & SG SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS), VUYYURU.**

**COOE301 - DISASTER MANAGEMENT**

**Unit-I:** Disaster : Introduction, Types of Disaster – Natural and Manmade, Introduction, causes, important examples, effects, management. Blizzards – Introduction, causes, important, examples, effects, management.

**Unit-II:** Introduction, causes, important examples, effects, and management of famines, storms, cyclones, floods.

**Unit-III:** Introduction, causes, important examples, effects, and management of earthquakes, tsunamis, landslides.

**Unit- IV:** Introduction, causes, important examples, effects, and management of volcanic eruptions, lightning strikes, limnic eruption, wildfires/bushfires.

**Unit- V:** Introduction, causes, important examples, effects, and management of epidemics, mining, nuclear, chemical and biological.

The guidelines to be followed by the question paper setters in COM307 – DISASTER MANAGEMENT for the third semester - end exams.

**PAPER TITLE: COOE301 - DISASTER MANAGEMENT**

**ELECTIVE PAPER**

**SEMESTER – III**

**Maximum Marks: 70**

**Duration: 3 Hours**

Weightage for the question paper

<b>Syllabus</b>	<b>Section –A (Short answer questions)</b>	<b>Section- B (Long answer questions) (with internal choice)</b>
Unit -1	2	1 (a or b)
Unit -2	2	1 (a or b)
Unit -3	2	1 (a or b)
Unit -4	2	1 (a or b)
Unit -5	2	1 (a or b)

- Each short answer question carries 2 marks in section-A.
- Each long answer question carries 10 marks in section-B.

The Question Paper Setters are requested to cover all the topics in the syllabus stipulated as per the weightage given by us.

**M.Com Degree Examination**

**Third Semester**

**Open Elective – Disaster Management**

**Time : 3 hours.**

**Maximum Marks : 70**

**SECTION – A**

Answer **ALL** the questions. Each question carries 2 marks.

(10×2=20M)

1. What is a disaster? Give some examples of disaster.
2. Define various types of disasters.
3. Define Famines.
4. What are the causes of floods?
5. Give some examples for earthquakes.
6. How do landslides occur?
7. What is a limnic eruption?
8. How do volcanic eruptions occur?
9. Define epidemics.
10. What is a nuclear?

**SECTION – B**

**(5×10=50M)**

**UNIT -I**

11. a) What is disaster management? Write the importance of disaster management?

(or)

- b) Define Blizzards. How can we survive from blizzards?



## **UNIT - II**

12. a) Write about various types of cyclones with suitable examples?

(or)

b) What causes floods? And what precautions we should take at the time of floods?

## **UNIT -III**

13. a) Write the causes and effects of earthquakes?

(or)

b) What are the damages/effects occur during tsunamis? And what precautions should be taken during tsunamis?

## **UNIT - IV**

14. a) Write about various types of volcanic eruptions? And give some examples of volcanic eruptions.

(or)

b) How do wildfires/bushfires occur? And what are the effects of wildfires?

## **UNIT - V**

15.a) What safety measures should be followed during mining by the employees and organisation?

(or)

b) What are epidemics? What precautions should be taken to survive from epidemics?

**A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS & SCIENCE,  
VUYYURU-521165**

(An Autonomous College in the Jurisdiction of Krishna University) Accredited

at the level 'A' by the NAAC

Sponsors: Siddhartha Academy of General & Technical Education



**DEPARTMENT OF COMPUTER SCIENCE**

Minutes of the meeting of Board of Studies in Computer Science for PG (M.Sc.)

**Date: 25-11-2021**



# A.G & S.G SIDDHARTHA DEGREE COLLEGE OF ARTS AND SCIENCE::VUYURU

(An Autonomous College in the Jurisdiction of Krishna University)  
Accredited at the level 'A' by the NAAC  
Sponsors: Siddhartha Academy of General & Technical Education

## DEPARTMENT OF COMPUTER SCIENCE (PG)

Minutes of the meeting of Board of Studies in Computer Science for M.Sc. (Computer Science) programme  
held on 25-11-2021 at 11:00A.M. for the Department of Computer Science.

Members Present		
Name of the Member	Role	Signature
Smt. T.Keerthi, I/C HOD, Dept. of Computer Science, A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru-521165. Mobile: 9959558485 E-Mail: keerthitineni16@gmail.com	Chairman	
Dr. K.Madhavi, Associate Professor, Dept of Computer Science, JNTUA. College of Engineering, Anantapur. Mobile: 9440206501 E-Mail: kasamadhavi@yahoo.com	University Nominee, Krishna University	
Dr.R.Satya Prasad, Professor, Department of Computer Science, Acharya Nagarjuna University, Nagarjuna Nagar-522508. Mobile: 9848487478 E-Mail: profrsp@gmail.com	Subject Expert	
Dr.T.S.Ravi Kiran, H.O.D & Assistant Professor, Dept of Computer Science, P.B. Siddhartha Degree College of Arts & Science-Vijayawada -520002. Mobile: 9441176980 E-Mail: kirantsr1@gmail.com	Special Invitee	
Sri.U.Sairam, C.E.O, Codegnan I.T Solutions OPC PVT LTD., Vijayawada 520002 Mobile: 9959555952 E-Mail: uppugundlasairam@gmail.com	Industrialist	
Ms. P.Srujana, Software Developer, TonmetriInfoSolutions, Vijayawada. Mobile: 9032671688 E-Mail: srujanapaladugu26@gmail.com	Alumni Representative	
Smt. V. Munki, Assistant Professor, A.G & S.G Siddhartha Degree College of Arts & Science. Mobile: 8099205522 E-Mail: munki.j2ee@gmail.com	Member	
Sri.B.MadhuSudhana Rao, Assistant Professor, A.G & S.G Siddhartha Degree College of Arts & Science. Mobile: 7842664766 E-Mail: ms.madhu27@gmail.com	Member	

## **AGENDA**

- To discuss and approve the *Structure, Syllabi and Model Question Papers* of *Third Semester* of M.Sc.(Computer Science) for the batch of students admitted from the academic year 2020-2021 and onwards.
- To discuss and approve the *Structure, Syllabi and Model Question Papers* of *First Semester* of M.Sc.(Computer Science) for the batch of students admitted from the academic year 2021-2022 and onwards.

## **RESOLUTIONS**

- **Resolved and recommended to introduce new syllabus, model papers in the Third Semester for the following courses:**
  - Internet of Things (20CS3T1)
  - Cryptography & Network Security (20CS3T2)
  - Design & Analysis Algorithms (20CS3T3)
  - Data Mining techniques (20CS3T4)
  - Web Technologies LAB (20CS3L1)
  - Data Mining Lab (20CS3L2)
- **To discuss and approve the *Structure, Syllabi and Model Question Papers* of Open Electives “*Visual Analytics for Executes*” and “*Web Programming*” for Third Semester**
- **Resolved and recommended to continue the same syllabus, model papers without changes in the First Semester for the following courses:**
  - Problem Solving Using Python programming (21CS1T1)
  - Computer Organization (21CS1T2)
  - Python Lab (21CS1L1)
- **Resolved and recommended to introduce new syllabus, model papers in the First Semester for the following courses:**
  - Software Engineering (21CS1T3)
  - Database Management System (21CS1T4)
  - Theory of Computation (21CS1T5)
  - DBMS Lab (21CS1L2)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

COURSE	COURSE CODE	L	T	P	C	Year
PROBLEM SOLVING USING PYTHON PROGRAMMING	20CS1T1	4	-	-	4	2020-21

**Course Outcomes:**

On successful completion of this course, the students:

1. Understand basics of Python Programming. (CO1)
2. Gain knowledge on *Decision Control Statements* and *Functions & Modules*. (CO2)
3. Be familiar with *Python Strings* and *Data Structures*. (CO3)
4. Have knowledge on *Classes & Objects*. (CO4)
5. Apply *Inheritance, Error and Exception Handling* and *Operator Overloading*. (CO5)

**UNIT I**

**Basics of Python Programming:** Features of Python, History of Python, The Future of Python, Writing and Executing First Python Program, Literal Constants, Variables and Identifiers, Data Types, Input Operation, Comments, Reserved Words, Indentation, Operators and Expressions, Expressions in Python, Operations on Strings, Other Data Types, Type Conversion.

**UNIT II**

**Decision Control Statements:** Conditional Branching Statements, Basic Loop Structures, Nested Loops, The Break Statement, The Continue Statement, The Pass Statement. The Else Statement used with Loops.

**Functions and Modules:** Function Definition, Function Call, Variable Scope and Lifetime, The Return Statement, More on Defining Functions, Recursive Functions, Modules, Packages in Python, Standard Library Modules.

**UNIT III**

**Python Strings Revisited:** Concatenating, Appending and Multiplying Strings, String Formatting Operator, Built in String Methods and Functions, Comparing Strings, Regular Expressions.

**Data Structures:** Sequence, Lists, Functional Programming, Tuple, Sets, Dictionaries.

**UNIT IV**

**Classes and Objects:** Classes and Objects, Class Method and self Argument, Class Variables and Object Variables, Public and Private Data Members, Private Methods, Calling a Class Method from Another Class Method, Built-in Class Attributes, Class Methods, Static Methods.

## UNIT V

**Inheritance:** Inheriting Classes in Python, Types of Inheritance, Abstract Classes and Interfaces.

**Error and Exception Handling:** Introduction to Errors and Exceptions, Handling Exceptions, Raising Exceptions, Built-in and User defined Exceptions

**Operator Overloading:** Concept of Operator Overloading, Advantage of Operator Overloading, Implementing Operator Overloading.

Prescribed Text Book			
	Author	Title	Publisher
1	Reema Thareja	Python Programming Using Problem Solving Approach	Oxford University Press

Reference Text Book			
	Author	Title	Publisher
1	Wesley Chun	Core Python Programming	Prentice Hall

A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.  
(An Autonomous College in the jurisdiction of Krishna University)  
M.Sc., (Computer Science) Programme - I Semester

Course Code: 20CS1T1 Title: PROBLEM SOLVING USING PYTHON PROGRAMMING  
(w.e.f admitted batch 2020-21)

Time: 3 Hours

Max. Marks: 70

Answer ALL questions

(10×2 = 20 Marks)

1. a) Define *Comments* and *Operators*. (BTL1)
- b) Define *Indentation*. (BTL1)
- c) What is *Dangling else Problem*? (BTL1)
- d) What is a *Package*? (BTL1)
- e) What is a *Slice*? (BTL1)
- f) Define *Immutable*. (BTL1)
- g) What is *Class Variable* and *Instance Variable*? (BTL1)
- h) What is *Namespace*? (BTL1)
- i) Differentiate *Error* and *Exception*? (BTL3)
- j) What is *Membership Operator*. (BTL1)

Answer Five Questions Choosing One Question from Each Unit.  
All Questions Carry Equal Marks. (5×10 = 50 Marks)

UNIT – I

2. A) Explain the features of Python Programming Language.(BTL2)
- (or)
- B) Explain *Different Types of Operators* in Python. (BTL2)

UNIT – II

3. A) Discuss *Basic Loop Structures* in Python with illustrations. (BTL6)
- (or)
- B) Explain *Modules* in Python with examples. (BTL2)

UNIT – III

4. A) State built-in *String Methods* and *Functions* in Python.(BTL1)
- (or)
- B) Explain *Tuple Data Structure* in Python with examples. (BTL2)

UNIT – IV

5. A) What are *Classes* and *Objects*? Write a program in Python to illustrate an instance variable. (BTL1)
- (or)
- B) Explain *Class Method* and *Static Method* with example. (BTL2)

UNIT – V

6. A) Explain *Different Types of Inheritance in Python* with suitable examples. (BTL2)
- (or)
- B) Explain any three *Built-in Exceptions* with relevant examples. (BTL2)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

COURSE	COURSE CODE	L	T	P	C	Year
COMPUTER ORGANIZATION	20CS1T2	4	-	-	4	2020-21

**Course Outcomes:**

On successful completion of this course, the students:

1. Understand *Digital Logic Circuits, Digital Components and Data Representation*. (CO1)
2. Know *Register Transfer and Micro Operations and Basic Computer Organization and Design*. (CO2)
3. Be familiar with *Micro Programmed Control and Central Processing Unit*. (CO3)
4. Have knowledge on *Computer Arithmetic*. (CO4)
5. Understand *Input-Output Organization & Memory Organization*. (CO5)

**UNIT I**

**Digital Logic Circuits:** Digital Computers, Logic Gates, Boolean Algebra, Map Simplification, Combinational Circuits, Flip-Flops, Sequential Circuits.

**Digital Components:** Integrated Circuits, Decoders, Multiplexers, Registers, Shift Registers, Binary Counters, Memory Unit.

**Data Representation:** Data Types, Complements, Fixed-Point Representation, Floating-Point Representation, Other Binary Codes, Error Detection Codes.

**UNIT II**

**Register Transfer and Micro Operations:** Register Transfer Language, Register Transfer, Bus & Memory Transfers, Arithmetic Micro Operations, Logic Micro Operations, Shift Micro Operations, Arithmetic Logic Shift Unit.

**Basic Computer Organization and Design:** Instruction Codes, Computer Registers, Computer Instructions, Timing & Control, Instruction Cycle, Memory-Reference Instructions, Input-Output Interrupt.

**UNIT III**

**Micro Programmed Control:** Control Memory, Address Sequencing, Micro Program Example, Design of Control Unit.

**Central Processing Unit:** General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, Data Transfer and Manipulation, Program Control.

**UNIT IV**



**Computer Arithmetic:** Introduction, Addition and Subtraction, Multiplication Algorithm, Floating Point Arithmetic Operations, Decimal Arithmetic Unit, Decimal Arithmetic Operations.

## UNIT V

**Input-Output Organization:** Peripheral Devices, Input-Output Interface, Asynchronous Data Transfer, Modes of Transfer, Priority Interrupt.

**Memory Organization:** Memory Hierarchy, Main Memory, Auxiliary Memory, Associative Memory, Cache Memory.

Prescribed Text Book			
	Author	Title	Publisher
1	M.Morris Mano	Computer System Architecture	3 <sup>rd</sup> Edition, Pearson Education (2008).

Reference Text Books			
	Author	Title	Publisher
1	V. Rajaraman, T. Radha Krishnan	Computer Organization and Architecture	PHI
2	Behrooz Parhami	Computer Architecture	Oxford (2007)
3	ISRD group	Computer Organization	Ace series, TMH (2007)
4	William Stallings	Computer Organization and Architecture – Designing for Performance	Pearson Education (2005)
5	P.Chakraborty	Computer Architecture and Organization	Jaico Books (2008)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

**Course Code: 20CS1T2**

**Title: COMPUTER ORGANIZATION**

(w.e.f admitted batch 2020-21)

**Time: 3 Hours**

**Max. Marks: 70**

**Answer ALL questions**

**(10×2 = 20 Marks)**

1. a) State any two *Logic Gates with Truth Tables*. (BTL1)
- b) Find the *Binary Number* ( ? )<sub>2</sub> to *Hexadecimal Number* (1C)<sub>16</sub> (BTL1)
- c) What is *Register Transfer*? (BTL1)
- d) What is *Accumulator* ? (BTL1)
- e) What is *Address Sequencing* ? (BTL1)
- f) Give details of *Stack Organization*. (BTL1)
- g) What is *BCD Adder* ? (BTL1)
- h) Perform *Binary Multiplication* for the decimal numbers 23 and 19. (BTL1)
- i) What is the difference between *Isolated* and *Memory Mapped I/O*? (BTL1)
- j) What is *Priority Interrupt* ? (BTL1)

**Answer Five Questions Choosing One Question from Each Unit.**

**All Questions Carry Equal Marks.**

**(5×10 = 50 Marks)**

UNIT – I

2. A) What is *Flip flop*? Explain *different types of Flip flops* in detail. (BTL1)
- (OR)
- B) Explain the *Fixed Point Representation* with an example. (BTL2)

UNIT – II

3. A) Explain *Logic Micro Operations* in detail. (BTL2)
- (OR)
- B) What is *Instruction Cycle*? Explain various phases of *Instruction Cycle*. (BTL1)

UNIT – III

4. A) Describe the design of Control Unit. (BTL2)
- (OR)
- B) Explain various *Addressing Modes*. (BTL2)

UNIT – IV

5. A) What is *BCD Added* ? Explain in detail. (BTL1)
- (OR)
- B) Explain *Booth's Multiplication Algorithm* with example. (BTL2)

UNIT – V

6. A) Explain different *Modes of Data Transfers*. (BTL2)
- (OR)
- B) What is *Cache Memory*? Discuss various *Mapping Procedures* of Cache Memory. (BTL1)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

COURSE	COURSE CODE	L	T	P	C	Year
SOFTWARE ENGINEERING	20CS1T3	4	-	-	4	2020-21

**Course Outcomes:**

On successful completion of this course, the students:

1. Understand various *Software Engineering Methods, Practices, Process Models and Agile Development Strategies*. (CO1)
2. Illustrate *Core Principles, Requirements & Modelling Concepts*. (CO2)
3. Identify different *Software Testing Approaches* and various aspects of *Software Quality Assurance*. (CO3)
4. Classify various *Process & Project Management Concepts*. (CO4)
5. Estimate *Software Projects & apply Formal Methods Modelling*. (CO5)

**UNIT I**

**Software and Software Engineering:** The Nature of Software: Defining Software, Software Application Domains, Legacy Software, The Unique Nature of WebApps, Software Engineering, The Software Process, Software Engineering Practices: The Essence of Practice, General Principles, Software Myths.

**Process Models:** A Generic Process Model: Defining a Framework Activity, Identifying a Task Set, Process Patterns, Process Assessment and Improvement, Prescriptive Process Models: The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Concurrent Models, A Final Word on Evolutionary Processes, Specialized Process Models: Component-Based Development, The Formal Methods Model, Aspect-Oriented Software Development, The Unified Process: A Brief History, Phases of the Unified Process, Personal and Team Process Models: Personal Software Process (PSP), Team Software Process (TSP).

**Agile Development:** What Is Agility, Agility and the Cost of Change, What Is an Agile Process: Agility Principles, The Politics of Agile Development, Human Factors, Extreme Programming (XP): XP Values, The XP Process, Industrial XP, The XP Debate, Other Agile Process Models: Adaptive Software Development (ASD), Scrum, Dynamic Systems Development Method (DSDM), Crystal, Feature Driven Development (FDD), Lean Software Development (LSD), Agile Modeling (AM), Agile Unified Process (AUP).

**UNIT II**

**Principles that Guide Practice: Core Principles:** Principles That Guide Process, Principles That Guide Practice, Principles That Guide Each Framework Activity: Communication Principles, Planning Principles, Modeling Principles, Construction Principles, Deployment Principles.

**Requirements Modeling: Scenarios, Information, and Analysis Classes:** Requirements Analysis: Overall Objectives and Philosophy, Analysis Rules of Thumb, Domain Analysis, Requirements Modeling Approaches, Scenario-Based Modeling: Creating a Preliminary Use Case, Refining a Preliminary Use Case, Writing a Formal Use Case, UML Models That Supplement the Use Case: Developing an Activity Diagram, Swimlane Diagrams.

**Data Modeling Concepts:** Data Objects, Data Attributes, Relationships, Class-Based Modeling: Identifying Analysis Classes, Specifying Attributes, Defining Operations, Class-Responsibility-Collaborator (CRC) Modeling, Associations and Dependencies, Analysis Packages.

### UNIT III

**Software Quality Assurance:** Background Issues, Elements of Software Quality Assurance, SQA Tasks, Goals, and Metrics: SQA Tasks, Goals, Attributes, and Metrics, Formal Approaches to SQA, Statistical Software Quality Assurance: A Generic Example, Six Sigma for Software Engineering, Software Reliability: Measures of Reliability and Availability, Software Safety, The ISO 9000 Quality Standards, The SQA Plan.

**Software Testing Strategies:** A Strategic Approach to Software Testing: Verification and Validation, Organizing for Software Testing, Software Testing Strategy-The Big Picture, Criteria for Completion of Testing, Strategic Issues, Test Strategies for Conventional Software: Unit Testing, Integration Testing, Test Strategies for Object-Oriented Software: Unit Testing in the OO Context, Integration Testing in the OO Context, Test Strategies for WebApps, Validation Testing: Validation-Test Criteria, Configuration Review, Alpha and Beta Testing, System Testing: Recovery Testing, Security Testing, Stress Testing, Performance Testing, Deployment Testing, The Art of Debugging: The Debugging Process, Psychological Considerations, Debugging Strategies, Correcting the Error

**Testing Conventional Applications:** Software Testing Fundamentals, Internal and External Views of Testing, White-Box Testing, Basis Path Testing: Flow Graph Notation, Independent Program Paths, Deriving Test Cases, Graph Matrices, Control Structure Testing: Condition Testing, Data Flow Testing, Loop Testing, Black-Box Testing: Graph-Based Testing Methods, Equivalence Partitioning, Boundary Value Analysis, Orthogonal Array Testing,

### UNIT IV

**Project Management Concepts:** The Management Spectrum: The People, The Product, The Process, The Project, People: The Stakeholders, Team Leaders, The Software Team, Agile Teams, Coordination and Communication Issues, The Product: Software Scope, Problem Decomposition, The Process: Melding the Product and the Process, Process Decomposition, The Project, The W5HH Principles.

**Process and Project Metrics:** Metrics in the Process and Project Domains: Process Metrics and Software Process Improvement, Project Metrics, Software Measurement: Size-Oriented Metrics, Function-Oriented Metrics, Reconciling LOC and FP Metrics, Object-Oriented Metrics, Use-Case-Oriented Metrics, WebApp Project Metrics, Metrics for Software Quality: Measuring Quality, Defect Removal Efficiency.

### UNIT V

**Formal Modeling And Verification:** The Cleanroom Strategy, Functional Specification: Black-Box Specification, State-Box Specification, Clear-Box Specification, Cleanroom Design: Design Refinement, Design Verification, Cleanroom Testing: Statistical Use Testing, Certification, Formal Methods Concepts, Applying Mathematical Notation for Formal Specification, Formal Specification Languages: Object Constraint Language (OCL), The Z Specification Language.

**Estimation for Software Projects:** Resources: Human Resources, Reusable Software Resources, Environmental Resources, Software Project Estimation, Decomposition Techniques: Software Sizing, Problem-Based Estimation, An Example of LOC-Based Estimation, An Example of FP-Based Estimation, Empirical Estimation Models: The Structure of Estimation Models, The COCOMO II Model, The Software Equation, Estimation for Object-Oriented Projects.

Prescribed Text Book			
	Author	Title	Publisher
1	Roger S Pressman	Software Engineering - A Practitioner's Approach	Seventh Edition, McGraw - Hill, A Business Unit of The McGraw-Hill Companies, Inc., 2010

Reference books			
	Author	Title	Publisher
1	Sommerville	Software engineering	7 <sup>th</sup> edition, Pearson education
2	S.A.Kelkar	Software Engineering - A Concise Study	PHI.
3	Waman S.Jawadekar	Software Engineering	TMH.
4	AH Behforooz and Frederick J.Hudson	Software Engineering Fundamentals	Oxford (2008)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**  
**Course Code: 20CS1T3                      Title: SOFTWARE ENGINEERING**  
**(w.e.f admitted batch 2020-21)**

**Time: 3 Hours**

**Max. Marks: 70**

**Answer ALL questions**

**(10×2 = 20 Marks)**

1. a) Define *Software Engineering*. (BTL1)
- b) What is *PSP & TSP*? (BTL2)
- c) Write any two key features of *Class-Responsibility-Collaborator (CRC)* Modeling. (BTL1)
- d) State any two *Deployment Principles*. (BTL1)
- e) What is *Software Reliability*? (BTL1)
- f) Describe the *Arts of Debugging*. (BTL2)
- g) What are the aspects to be considered while testing *Object Oriented Software*? (BTL1)
- h) Write any two *W5HH Principles*. (BTL1)
- i) State various *Resources* while estimating the *Software Projects*. (BTL1)
- j) What is *State Box*? (BTL1)

**Answer Five Questions Choosing One Question from Each Unit.**

**All Questions Carry Equal Marks.**

**(5×10 = 50 Marks)**

UNIT – I

2. A) What is *Myth*? State various myths of *Software Myths*. (BTL1)
- (or)
- B) Describe any two *Prescriptive Process Models*. (BTL2)

UNIT – II

3. A) State (i) *Communication* and (ii) *Planning Principles*. (BTL1)
- (or)
- B) Describe *Scenario-Based Modeling* in detail. (BTL2)

UNIT – III

4. A) Discuss the testing strategies to test *Conventional Software*. (BTL2)
- (or)
- B) What is *White Box Testing*? Explain in detail. (BTL1)

UNIT – IV

5. A) Discuss the *Management Spectrum* in detail. (BTL6)
- (or)
- B) Explain (i) *Size-Oriented Metrics* and (ii) *Function-Oriented Metrics* in detail. (BTL2)

UNIT – V

6. A) Explain *Functional Specification of Cleanroom Strategy*. (BTL2)
- (or)
- B) Describe (i) *The COCOMO II Model* and (ii) *The Software Equation of Empirical Estimation Models* (BTL2)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

COURSE	COURSE CODE	L	T	P	C	Year
DATABASE MANAGEMENT SYSTEMS	20CS1T4	4	-	-	4	2020-21

**Course Outcomes:**

On successful completion of this course, the students:

1. Understands the *Concepts & Architecture* of Databases. (CO1)
2. Able to apply simple and complex *SQL Queries & Relational Algebra & Relational Calculus* operations. (CO2)
3. Gain knowledge on *ER, EER Schemas & Normalization*. (CO3)
4. Understands *Disk Storage Organization, Hashing & Indexing*. (CO4)
5. Be aware of *Transaction Processing, Concurrency Control and Distributed Databases*. (CO5)

**UNIT I**

**Databases and Database Users:** Introduction, An Example, Characteristics of the Database Approach, Actors on the Scene, Workers behind the Scene, Advantage of Using the DBMS Approach.

**Database System Concepts and Architecture:** Data Models, Schemas, and Instances, Three-Schema Architecture and Data Independence, Database Languages and Interfaces, The Database System Environment, Centralized and Client/Server Architectures for DBMSs.

**The Relational Data Model and Relational Database Constraints:** Relational Model Concepts, Relational Model Constraints and Relational Database Schemas, Update Operations, Transactions, and Dealing with Constraint Violations.

**UNIT II**

**Basic SQL:** SQL Data Definition and Data Types, Specifying Constraints in SQL, Basic Retrieval Queries in SQL, INSERT, DELETE, and UPDATE Statements in SQL.

**More SQL:** More Complex SQL Retrieval Queries, Views (Virtual Tables) in SQL, Schema Change Statements in SQL.

**The Relational Algebra and Relational Calculus:** Unary Relational Operations: SELECT and PROJECT, Relational Algebra Operations from Set Theory, Binary Relational Operations: JOIN and DIVISION, Additional Relational Operations, Examples of Queries in Relational Algebra, The Tuple Relational Calculus, The Domain Relational Calculus.

**UNIT III**

**Data Modeling Using the Entity-Relationship (ER) Model:** Using High-Level Conceptual Data Models for Database Design, Entity Types, Entity Sets, Attributes, Keys, Relationship Types, Relationship Sets, Roles, Structural Constraints, Weak Entity Types, ER Diagrams, Naming Conventions, Design Issues.

**The Enhanced Entity-Relationship (EER) Model:** Subclasses, Super classes, Inheritance, Specialization and Generalization, Constraints and Characteristics of Specialization and Generalization Hierarchies, Modeling of UNION Types Using Categories, A Sample UNIVERSITY EER Schema, Design Choices, Formal Definitions.

**Functional Dependencies:** Introduction, Basic Definitions, Trivial and Non-Trivial Dependencies, Closure of set of Dependencies, Closure of set of Attributes, Irreducible sets of dependencies.

**Further Normalization 1NF, 2NF, 3NF, BCNF:** Introduction, Nonloss decomposition and functional dependencies, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> normal forms, Boyce-Codd Normal Form. Multivalued Dependency and Fourth Normal Form, Join Dependencies and Fifth Normal.

#### **UNIT IV**

**Disk Storage, Basic File Structures and Hashing:** Secondary Storage Devices, Buffering of Blocks, Placing File Records on Disk, Operations on Files, Files of Unordered Records (Heap Files), Files of Ordered Records (Sorted Files), Hashing Techniques, Parallelizing Disk Access Using RAID Technology.

**Indexing Structures for Files:** Types of Single-Level Ordered Indexes, Multilevel Indexes, Dynamic Multilevel Indexes Using B-Trees and B<sup>+</sup>-Trees.

#### **UNIT V**

**Introduction to Transaction Processing Concepts and Theory:** Introduction to Transaction Processing, Transaction and System Concepts, Desirable Properties of Transactions, Characterizing Schedules Based on Recoverability, Characterizing Schedules Based on Serializability, Transaction Support in SQL.

**Concurrency Control Techniques:** Two-Phase Locking Techniques for Concurrency Control, Concurrency Control Based on Timestamp Ordering, Multiversion Concurrency Control Techniques, Validation (Optimistic) Concurrency Control Techniques, Granularity of Data Items and Multiple Granularity Locking, Using Locks for Concurrency Control in Indexes.

**Distributed Databases:** Distributed Database Concepts, Types of Distributed Database Systems, Distributed Database Architectures, Data Fragmentation, Replication and Allocation Techniques for Distributed Database Design.



Prescribed Text Book			
	Author	Title	Publisher
1	Ramez Elmasri, Shamkant B. Navathe	Fundamentals of Database Systems.	Pearson Education, Seventh Edition, 2017
2	C.J. Date, A.Kannan, S.Swamynathan	An Introduction to Database Systems	VII Edition Pearson Education (2006).

Reference Text Books			
	Author	Title	Publisher
1	Peter Rob, Carlos Coronel	Database Systems - Design, Implementation and Management	Eighth Edition, Thomson (2008)
2	Raman A Mata - Toledo, Panline K. Cushman	Database Management Systems	Schaum's Outlines, TMH (2007)
3	Steven Feuerstein	Oracle PL/SQL - Programming	10 <sup>th</sup> Anniversary Edition, OREILLY (2008)

A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.  
(An Autonomous College in the jurisdiction of Krishna University)  
M.Sc., (Computer Science) Programme - I Semester

**Course Code: 20CS1T4**

**Title: DATABASE MANAGEMENT SYSTEMS**

(w.e.f admitted batch 2020-21)

**Time: 3 Hours**

**Max. Marks: 70**

**Answer ALL questions**

**(10×2 = 20 Marks)**

1. a) What is *Data Independence*? (BTL1)
- b) What is *Primary Key*? (BTL1)
- c) Write example for *Update Command*. (BTL1)
- d) What is *Join Condition*? Explain with example. (BTL1)
- e) What is *Weak Entity*? (BTL1)
- f) What is *First Normal Form*. (BTL1)
- g) What is *Heap File*. (BTL1)
- h) Write advantage of using *Multilevel Indexes*? (BTL1)
- i) Write *Properties of Transaction*. (BTL1)
- j) What is *Data Fragmentation*? (BTL1)

**Answer Five Questions Choosing One Question from Each Unit.**

**All Questions Carry Equal Marks.**

**(5×10 = 50 Marks)**

UNIT – I

2. A) What is DBMS? Explain advantage of DBMS. (BTL1)  
(or)  
B) Explain *Three Schema Architecture* of DBMS with neat diagram. (BTL2)

UNIT – II

3. A) What is Constraint? Explain various *Constraints* of the Relational Model. (BTL1)  
(or)  
B) Describe *SELECT & PROJECT* Operations of Relational Algebra. (BTL2)

UNIT – III

4. A) What is *Generalization*? Explain with example. (BTL1)  
(or)  
B) What is *BCNF*? Explain with example. (BTL1)

UNIT – IV

5. A) What is Hashing? Describe *Internal & External Hashing Techniques*.  
(or)  
B) What is B-Tree? Construct B-Tree for the values 10, 20, 30, 40, 50, 60, 70, 80, 90 of order 3.

UNIT – V

6. A) Explain *Concurrency Control Based on Timestamp Ordering*. (BTL2)  
(or)  
B) Explain *Distributed Database Concepts* in detail. (BTL2)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

COURSE	COURSE CODE	L	T	P	C	Year
THEORY OF COMPUTATION	20CS1T5	4	-	-	4	2020-21

**Course Outcomes:**

On successful completion of this course, the students:

1. Understand *Fundamentals of Automata* and *Finite Automata*. (CO1)
2. Able to apply *Regular Languages*. (CO2)
3. Gain knowledge on *Grammar Formalism* and *Context Free Grammars*. (CO3)
4. Design *Pushdown Automata*. (CO4)
5. Understand *Turing Machine* and *Computability Theory*. (CO5)

**UNIT I**

**Fundamentals:** Strings, Alphabet, Language, Operations, Finite Automaton Model, Acceptance of Strings and Languages, FA, Transition Diagrams and Language Recognizers.

**Finite Automata:** Deterministic Finite Automaton, Non Deterministic Finite Automaton (Simple Problems), Differences between NFA and DFA, NFA with  $\epsilon$  Transitions- *Significance of NFA with Epsilon* , *Acceptance of Language*, Conversions and Equivalence-*Conversion from NFA with  $\epsilon$  to NFA without  $\epsilon$ , NFA to DFA Conversion, NFA with  $\epsilon$  to DFA*, Minimization of FSM, Equivalence between two FSMs, Equivalence of Moore and Mealy Machines.

**UNIT II**

**Regular Languages:** Regular Sets, Regular Expressions, Identity Rules for Regular Expression, Conversion of Finite Automata (DFA) to Regular Expressions - *using State Elimination Method and Arden's Theorem*, Conversion of Regular Expression to  $\epsilon$ -NFA, Pumping Lemma of Regular Languages (Sets) (Proofs Not Required).

**UNIT III**

**Grammar Formalism:** Regular Grammars - *Right Linear and Left Linear Grammars*, Inter Conversion-*Conversion of a Regular Grammar for a given Finite Automata, Construct FA from Regular Grammar*, Context Free Grammar, Derivation Trees, Sentential Forms, Right most and Leftmost Derivation of Strings.

**Context Free Grammars:** Ambiguity in Context Free Grammars. Minimization of Context Free Grammars. Chomsky Normal Form, Greibach Normal Form, Pumping Lemma for Context Free Languages, Enumeration Properties of CFL (Proofs Not Required), Simple Problems.

## UNIT IV

**Push Down Automata:** Definition, Model, Design of PDA, Acceptance by Final State and Acceptance by Empty Stack, Inter Conversion - *Construct PDA Equivalent to a given CFL, Construct CFL Equivalent to a given PDA* (Proofs Not Required).

## UNIT V

**Turing Machine:** Definition, Model, Design of TM, Recursively Enumerable Languages and its Properties and Recursive Languages, Types of Turing Machines: Simple Problems.

**Computability Theory:** Chomsky Hierarchy of Languages: *Regular Grammars, Unrestricted Grammars, Context Sensitive Languages*, Decidability of Problems: *Properties of Recursive and Recursively Enumerable Languages*, Universal Turing Machine, Undecidability of Posts Correspondence Problem, Definition of NP Complete and NP Hard Problems.

Prescribed Text Book			
	Author	Title	Publisher
1	Hopcroft H.E. and Ullman	Introduction to Automata Theory Languages and Computation	J. D. Pearson Education

Reference Text Books			
	Author	Title	Publisher
1	John C Martin	Introduction to languages and the Theory of Computation	TMH
2	A.A Putumbekar	Formal Languages and Automata Theory	Technical Publications
3	Lewis H.P. & Papadimitriou C.H	Elements of Theory of Computation	Pearson PHI
4	Mishra and Chandrashekar	Theory of Computer Science and Automata Languages and Computation	2 <sup>nd</sup> edition, PHI.
5	Daniel I.A. Cohen	Introduction to Computer Theory	John Wiley

(w.e.f admitted batch 2020-21)

**Time: 3 Hours**

**Max. Marks: 70**

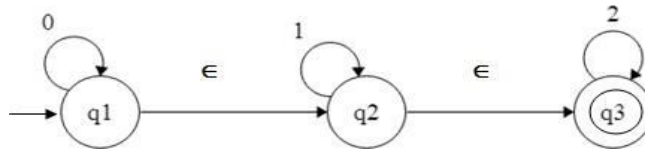
**Answer ALL questions**

**(10×2 = 20 Marks)**

1.

a) Define Alphabet. (BTL1)

b) Find  $\epsilon$ -closure of all states for the given *Transition Diagram*. (BTL1)



c) Define Set with

*Regular Expression and Regular example* (BTL1)

d) Write *Regular Expression* which denotes a language L over the set  $\Sigma = \{0\}$  having even length of string. (BTL1)

e) Define *Parse Tree* with example. (BTL1)

f) Show that the grammar is ambiguous (BTL2)

$$S \rightarrow a \mid sA \mid \mid bSS \mid \mid SSb \mid \mid SbS \mid$$

g) Give the formal definition of *Push Down Automata*. (BTL1)

h) Define *Deterministic PDA*. (BTL1)

i) What are Recursively Enumerable Languages? (BTL1)

j) Define *Turing Machine*. (BTL1)

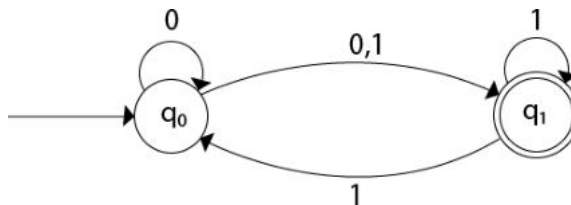
**Answer Five Questions Choosing One Question from Each Unit.**

**All Questions Carry Equal Marks.**

**(5×10 = 50 Marks)**

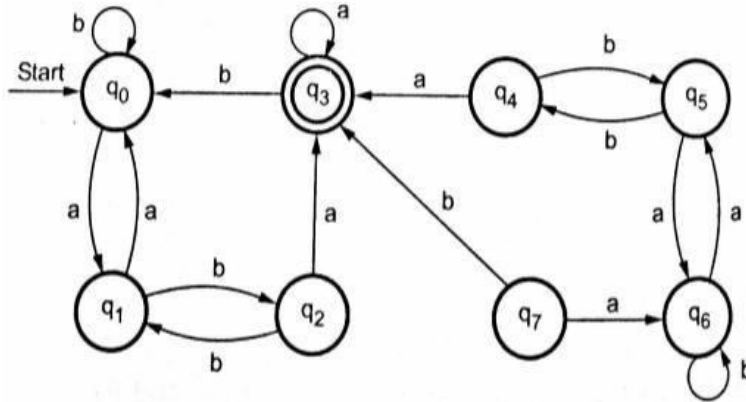
UNIT – I

2. A) Convert the given NFA to DFA. (BTL3)



(OR)

B) Construct the minimum DFA for the following *Transition Diagram*. (BTL3)

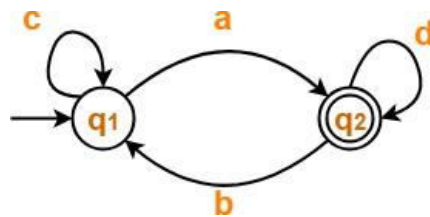


UNIT – II

3. A) Construct epsilon NFA for *Regular Expression*  $1+00+010^*$  (BTL3)

(OR)

B) Find *Regular Expression* for the following *DFA* using *State Elimination Method*. (BTL1)



UNIT – III

4. A) Drive the string “aabbabba” for *Leftmost Derivation* and *Rightmost Derivation* using a CFG given by (BTL5)

- $S \rightarrow aB \mid bA$
- $A \rightarrow a \mid aS \mid bAA$
- $B \rightarrow b \mid bS \mid aBB$

(OR)

B) For the following grammar, construct CNF (BTL3)

- $S \rightarrow ABC \mid BbB$
- $A \rightarrow aA \mid BaC \mid aaa$
- $B \rightarrow bBb \mid a \mid D$
- $C \rightarrow CA \mid AC$
- $D \rightarrow \epsilon$

- i) Eliminate  $\epsilon$ -productions.
- ii) Eliminate any unit productions in the resulting grammar.
- iii) Eliminate any useless symbols in the resulting grammar.

.UNIT – IV

5. A) Convert the following *Context Free Grammar* to *Push Down Automata* (BTL3)

$S \rightarrow AA \mid a$   
 $A \rightarrow SA \mid b$

(OR)

- B) The PDA is as given below

$A = (\{q_0, q_1\}, \{0, 1\}, \{S, A\}, \delta, q_0, S, \emptyset)$

Where  $\delta$  is as given below

$\delta(q_0, 1, S) = \{(q_0, AS)\}$

$\delta(q_0, \epsilon, S) = \{(q_0, \epsilon)\}$

$\delta(q_0, 1, A) = \{(q_0, AA)\}$

$\delta(q_0, 0, A) = \{(q_1, A)\}$

$\delta(q_0, 1, A) = \{(q_1, \epsilon)\}$

$\delta(q_0, 0, S) = \{(q_0, S)\}$

Construct the CFG equivalent to this PDA. (BTL3)

UNIT – V

6. A) Design a *Turing Machine* for the Language  $L = \{a^n b^n c^n \mid n \geq 1\}$  (BTL6)

(OR)

- B) Define PCP and also find the correspondence system as given below

$A = (1, 0, 010, 11)$  and  $B = (10, 10, 01, 1)$  the input set is  $\Sigma = \{0, 1\}$  find the solution. (BTL1)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

COURSE	COURSE CODE	L	T	P	C	Year
PROBLEM SOLVING USING PYTHON PROGRAMMING LAB	20CS1L1	-	-	8	4	2020-21

**Course Outcomes:**

On successful completion of this course, the students:

1. Understand basics of *Python Programming*. (CO1)
  2. Gain knowledge on *Decision Control Statements and Functions & Modules*. (CO2)
  3. Be familiar with *Python Strings and Data Structures*. (CO3)
  4. Apply *Inheritance, Error and Exception Handling and Operator Overloading*. (CO4)
  5. Able to connect Database and perform Database Access. (CO5)
1. Write a python program to enter a number and display its hex and octal equivalent and its square root.
  2. WAP to read and print values of variables of different data types.
  3. WAP
    - a. To calculate area of a triangle using herons formula.
    - b. To calculate the distance between two points.
    - c. To calculate the area of the circle.
  4. WAP to perform addition, subtraction, multiplication, division, integer division, and modulo division on two integer numbers.
  5. WAP to calculate the total amount of money in the piggybank, given the coins of Rs10, Rs 5, Rs 2 and Rs1.
  6. WAP to calculate the bill amount for an item given its quantity sold, value, discount and tax.
  7. WAP to calculate a students result based on two examinations, 1 sports event and 3 activities conducted. The weightage of activities=30 percent, sports=20 percent and examination=50 percent.
  8. WAP to convert a floating point number into the corresponding integer.
  9. A company decides to give bonus to all its employees on diwali. 5% bonus on salary is given to the male workers and 10% bonus on salary to the female workers. WAP to enter the salary of the employee and gender of the employee gets an extra 2% bonus on salary. Calculate the bonus that has to be given to the employee and display the salary that the employee will get.
  10. WAP to calculate tax given the following conditions:
    - If income is less than 1,50,000 then no tax
    - If taxable income is 1,50,001 – 300,000 then charge 20% tax
    - If taxable income is above 5,00,001 then charge 30% tax
$$\text{MIN1} = 150001$$

$$\text{MAX1} = 300000$$

$$\text{RATE1} = 0.10$$



MIN2 = 300001

MAX2=500000

RATE2=0.20

MIN3=500001

RATE3=0.30

11. WAP to calculate the roots of quadratic equation.
12. WAP to make a simple calculator.
13. WAP to print the calendar of any given year.
14. WAP to calculate simple interest .suppose the customer is a senior citizen. He is being offered 12% interest for all customers the ROI is 10% using functions.
15. WAP to display the date and time using the time module.
16. Write a python program to perform inheritance.
17. Write a Python program to perform exception handling.
18. WAP to demonstrate slice operation on string objects.
19. a. WAP to calculate fib(n) using a dictionary.  
b. to create a dictionary cubes of odd numbers in the range 1 to 10.
20. WAP to parse an emailed to print from which email server it was sent and when.
21. WAP to perform operations on stack.
22. WAP to perform read and write operations in files.
23. WAP that accepts filename as an input from an user open a file count a number of times a character appears in the file.
24. Write a program on modules.
25. Write a program to perform image operations.
26. Write a GUI for an expression calculator using tk.
27. Write a program to print text from the audio file. (Speech to Text and using `speech_recognition` library).
28. Write a program to connect database and create a table using SQLite.
29. Write a program to perform insertion and selection operation using SQLite.

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - I Semester**

COURSE	COURSE CODE	L	T	P	C	Year
DBMS LAB	20CS1L2	-	-	8	4	2020-21

**Course Outcomes:**

1. Create Database using DDL Commands. (CO1)
2. Retrieve Data from database using DML for a given situation. (CO2)
3. Familiarize with a Query Language through basic SQL Queries. (CO3)
4. Experiment Nested Query, Joins, Integrity Constraints and Views in database. (CO4)
5. Demonstrate Trigger, Function and Procedure using PL/SQL. (CO5)

**CYCLE-I**

Aim: Marketing Company wishes to computerize their operations by using following tables.

Table Name: Client- Master			
Description: Used to store client information			
Column Name	Data Type	Size	Attribute
CLIENT_NO	Varchar2	6	Primary key and first letter must start with
NAME	Varchar2	20	Not null
ADDRESS 1	Varchar2	30	
ADDRESS S	Varchar2	30	
CITY	Varchar2	15	
PINCODE	Varchar2	8	
STATE	Varchar2	15	
BAL_DUE	Number	10,2	

Table Name: Product_ Master			
Description: Used to store product information			
Column Name	Data Type	Size	Attribute
PRODUCT_NO	Varchar2	6	Primary key and first letter must start with
DESCRIPTION	Varchar2	15	Not null
PROFIT_PERCENT	Number	4,2	Not null
UNIT_MEASUE	Varchar2	10	
QTY_ON_HAND	Number	8	
REORDER_LVL	Number	8	
SELL_PRICE	Number	8, 2	Not null, cannot be 0
COST_PRICE	Number	8,2	Not null, cannot be 0

Table Name: Salesman_Master			
Description: Used to store salesman information working for the company.			
Column Name	Data Type	Size	Attribute
SALESMAN_NO	Varchar2	6	Primary key and first letter must start with „S“
SALESMAN_NAME	Varchar2	20	Not null
ADDRESS1	Varchar2	30	

ADDRESS2	Varchar2	30	
CITY	Varchar2	20	
PINCODE	Number	8	
STATE	Vachar2	20	
SAL_AMT	Number	8,2	Not null, cannot be 0
TGT_TO_GET	Number	6,2	Not null, cannot be 0
YTD_SALES	Number	6,2	Not null
REMARKS	Varchar2	20	

Table Name: Sales_Order			
Description: Used to store client's orders			
Column Name	Data Type	Size	Attribute
ORDER_NO	Varchar2	6	Primary key and first letter must start with „S“
CLIENT_NO	Varchar2	6	Foreign Key
ORDER_DATE	Date		
DELY_ADDRESS	Varchar2	25	
SALESMAN_NO	Varchar2	6	Foreign Key
DELY_TYPE	Char	1	Delivery: part(p)/ full(f) and default „F“
BILL_YN	Char	1	
DELY_DATE	Date		Can't be less than order date
ORDER_STATUS	Varchar2	10	Values (“In Process”, “Fulfilled”,

Table Name: Sales_Order_Details			
Description: Used to store client's order with details of each product ordered.			
Column Name	Data Type	Size	Attribute
ORDER_NO	Varchar2	6	Primary key references SALES_ORDER table
PRODUCT_NO	Varchar2	6	Foreign Key references SALES_ORDER_table
QTY_ORDERED	Number	8	
QTY_DISP	Number	8	
PRODUCT_RATE	Number	10,2	Foreign Key

Solve the following queries by using above tables.

1. Retrieve the list of names, city and the state of all the clients.
2. List all the clients who are located in „Mumbai“ or „Bangalore“.
3. List the various products available from the product\_master table.
4. Find the names of sales man who have a salary equal to Rs.3000.
5. List the names of all clients having „a“ as the second letter in their names.
6. List all clients whose Bal due is greater than value 1000.
7. List the clients who stay in a city whose first letter is „M“.
8. List all information from sales-order table for orders placed in the month of July.
9. List the products whose selling price is greater than 1000 and less than or equal to 3000.
10. Find the products whose selling price is greater than 1000 and also find the new selling price as original selling price 0.50.
11. Find the products in the sorted order of their description.
12. Find the products with description as „540HDD“ and „Pen drive“.
13. Count the total number of orders.
14. Print the description and total qty sold for each product.
15. Calculate the average qty sold for each client that has a maximum order value of 15,000.
16. Find all the products whose quantity on hand is less than reorder level.
17. List the order number and day on which clients placed their order.
18. Find out the products and their quantities that will have to deliver in the current month.

19. Find the names of clients who have placed orders worth of 10000 or more.
20. Find the client names who have placed orders before the month of June,2018.

### CYCLE-II

Aim: A manufacturing company deals with various parts and various suppliers supply these parts. It consists of three tables to record its entire information. Those are as follows.

Supplier (Supplier\_No, Sname, City, status)  
 Part( Part\_no, pname, color, weight, city, cost)  
 Shipment (supplier\_No, Part\_no, city)  
 JX( project\_no, project\_name, city)  
 SPJX (Supplier\_no, part\_no, project\_no, city)

Solve the following queries by using above tables.

1. Get supplier numbers and status for suppliers in Chennai with status > 20.
2. Get project names for projects supplied by supplier S.
3. Get colors of parts supplied by supplier S<sub>1</sub>.
4. Get part numbers for parts supplied to any project in Mumbai.
5. Find the id's of suppliers who supply a red or pink parts.
6. Find the pnames of parts supplied by London supplier and by no one else.
7. Get the names of the parts supplied by the supplier „Mart“ and „Miller“.
8. Get supplier names for suppliers who do not supply part P<sub>2</sub>.
9. Get all pairs of supplier numbers such that the suppliers concerned are “colocated”.
10. Get suppliers names for the suppliers who supply at least one red part.

### CYCLE-III

Aim: An enterprise wishes to maintain a database to automate its operations. Enterprise divided into a certain departments and each department consists of employees. The following two tables describes the automation schemas.

Emp(Empno, Ename, Job, Mgr, Hiredate, Sal, Comm, Deptno)  
 Dept(Deptno, Dname, Loc)

Solve the following queries by using above tables.

1. List the details of employees who have joined before the end of September“ 81.
2. List the name of the employee and designation of the employee, who does not report to anybody.
3. List the name, salary and PF amount of all the employees (PF is calculated as 10% of salary)
4. List the names of employees who are more than 2 years old in the organization.
5. Determine the number of employees, who are taking commission.
6. Update the employee salary by 20% , whose experience is greater than 12 years.
7. Determine the department does not contain any employees.
8. Create a view, which contains employee name and their manager names working in sales department.
9. Determine the employees, whose total salary is like the minimum salary of any department.
10. List the department numbers and number of employees in each department.
11. Determine the employees, whose total salary is like the minimum salary of any department.
12. List average salary for all departments employing more than five people.
13. Determine the names of employees, who take highest salary in their departments.
14. Determine the names of employees, who earn more than their managers.
15. Display ename, dname, even if no employee belongs to that department (use outer join).

### CYCLE-IV

An Airline system would like to keep track their information by using the following relations.

FLIGHTS( fl\_no: integer, from: string, to: string, distance: integer, price: integer)

AIRCRAFT(aid: integer, aname: string, cruising\_range: integer)

CERTIFIED(eid: integer, aid: integer)

Employees( eid: integer, ename: string, salary: real)

Note that the employees relation describes pilots and other kinds of employees as well; every pilot is certified for aircraft and only pilots are certified to fly. Resolve the following queries.

- a) Find the names of pilots whose salary is less than the price of the cheapest route from Newyork to Chicago.
- b) For each pilot who is certified for more than 2 aircraft, find the eid's and the maximum cruising range of the aircraft that he or she certified for.
- c) For all aircraft with cruising range over 1,500 miles, find the name of the aircraft and the average salary of all pilots certified for this aircraft.
- d) Find the aid's of all aircraft than can be used from chicaga to LosAngels.
- e) Find the name of the pilots certified from some Boeing aircraft.
- f) Print the enames of pilots who can operate planes with cruising range greater than 3,500 miles, but are not certified by Boeing aircraft.
- g) Find the eid's of employees who are certified for exactly 2 aircrafts.
- h) Find the total amount paid to employees as salaries.
- i) Find the aid's of all than can be used on non-stop flights from Chennai to Dubai.
- j) Find the eid's of employee who make second highest salary.

### PL/SQL PROGRAMS

1. Write a PL/SQL program to check the given number is strong or not.
2. Write a PL/SQL program to check the given string is palindrome or not.
3. Write a PL/SQL program to swap two numbers without using third variable.
4. Writ a PL/SQL program to generate multiplication tables for 2, 4, 6.
5. Write a PL/SQL program to check the given number is Amstrong or not.
6. Write a PL/SQL code to find the factorial of any number.
7. Write a PL/SQL program to display sum of even numbers and sum of odd numbers in the given range.
8. Write a PL/SQL program to check the given number is palindrome or not.
9. The HRD manager has decide to raise the employee salary by 15% write a PL/SQL block to accept the employee number and update the salary of that employee. Display appropriate message based on the existence of the record in Emp table.
10. Write a PL/SQL program to display to 10 rows in Emp table based on their job and salary.
11. Write a PL/SQL program to raise the employee salary by 10% for department number 30 people and also maintain the raised details in the raise table.
12. Write a procedure to update the salary of Employee, who are not getting commission by 10%.
13. Write a PL/SQL procedure to prepare an electricity bill by using following table.

Table used: Elect

Name	Null?	Type
MNNO	NOT NULL	NUMBER(3)
CNAME		VARCHAR2(20)
CUR_READ		NUMBER(5)
PREV_READ		NUMBER(5)
NO_UNITS		NUMBER(5)
AMOUNT		NUMBER(8,2)
SER_TAX		NUMBER(8,2)
NET_AMT		NUMBER(9,2)

14. Write a PL/SQL program to prepare an telephone bill by using following table and print the monthly bills for each customer.

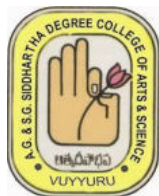
Table used: Phone		
Name	Null?	Type
TEL_NO	NOT NULL	NUMBER(6)
CNAME		VARCHAR2(20)
CITY		VARCHAR2(10)
PR_READ		NUMBER(5)
CUR_READ		NUMBER(5)
NET_AMT		NUMBER(5)
TOT-AMT		NUMBER(8,2)

15. Write a PL/SQL program to raise the employee salary by 10 %, who are completed ther 25 years of service and store the details at appropriate tables (Define the Retair\_ Emp\_Table) .
16. Write a PL/SQL program to evaluate the grade of a student with following conditions:  
 For pass: all marks > 40  
 For I class: Total % > 59  
 For II Class: Total % between >40 and < 60  
 For III class: total % = 40  
 And also maintain the details in abstract table.

1. Table Std		
Name	Null?	Type
NO	NOT NULL	NUMBER
NAME		VARCHAR2(10)
INTNO		NUMBER
CLASS	NOT NULL	VARCHAR2(10)
M1		NUMBER
M2		NUMBER
M3		NUMBER
M4		NUMBER
M5		NUMBER

2. Table Abstract		
Name	Null?	Type
STDNO		NUMBER
STDNAME		VARCHAR2(10)
CLASS		VARCHAR2(10)
MONTH		VARCHAR2(10)
INTNO (INTEGER NUMBER)		NUMBER
TOT		NUMBER
GRADE		VARCHAR2(10)
PERCENT		NUMBER
DAT_ENTER		DATE

**Appendix-II**  
**Third Semester Structure, Syllabus & Model Question Papers of M.Sc.(Computer Science)**  
**Programme.**  
**(For the batch of Students admitted during the Academic Year 2020-2021)**



**A.G & S.G Siddhartha Degree College of Arts & Science**  
**Vuyyuru – 521165**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**NAAC reaccredited at ‘A’ level**

**Programme: M.Sc.(Computer Science)**

**Title of the Paper: Internet of Things**

**Semester: III**

Course Code	20CS3T1	Course Delivery Method	Class Room / Blended Mode
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction :2021-22	Year of Offering:2021-22	Year of Revision:2021-22	Percentage of Revision: 0%

**Course Objective:** To understand and gain knowledge on *Over View of Internet of Things, Models, Layers & Standardization, Protocols & Design Principles for Connected Devices, Internet Connectivity Principles, Protocols & Application Layer Protocols, Data Acquiring, Business Models and Business Processes.*

**Course Outcomes:** On successful completion of the course student will be able to:

**CO1:** Attain knowledge over view of *Internet of Things.*

**CO2:** Understand *Models, Layers & Standardization.*

**CO3:** Apply *Protocols & Design Principles* for Connected Devices.

**CO4:** Understand *Internet Connectivity Principles, Protocols & Application Layer Protocols.*

**CO5:** Understand *Data Acquiring, Business Models and Business Processes.*

## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<b>The Internet of Things:</b> An Overview of Internet of Things, Internet of Things Technology, Behind IoT Sources of the IoT, M2M Communication, Examples of IoT, Design Principles for Connected Devices, Business Models for Business Processes in the Internet of Things.	12
II	<b>Design Principles for Connected Devices:</b> IoT / M2M systems layers and Designs Standardizations, Modified OSI Stack for the IoT / M2M Systems, ETSI M2M Domains and High-level Capabilities ,Communication Technologies, Data Enrichment and Consolidation and Device Management Gateway ease of Designing and Affordability.	12
III	<b>Design Principles for the Web Connectivity:</b> Design Principles for the Web Connectivity for Connected Devices, Web Communication Protocols for Connected Devices, Message Communication Protocols for Connected Devices, Web Connectivity for Connected Devices.	12
IV	<b>Internet Connectivity Principles:</b> Introduction, Internet Connectivity, Application Layer Protocols: <i>HTTP, HTTPS, FTP, Telnet.</i>	12
V	<b>Data Acquiring, Organizing and Analytics in IoT / M2M:</b> Introduction, Applications / Services / Business Processes, IOT / M2M Data Acquiring and Storage, Business Models for Business Processes in the Internet of Things, Organizing Data, Transactions, Business Processes, Integration and Enterprise Systems.	12

Prescribed Text Book			
	Author	Title	Publisher
1	Rajkamal	Internet of Things: Architecture, Design Principles and Applications	McGraw Hill Higher Education

Reference Text Book			
	Author	Title	Publisher
1	Adrian McEwen and Hakim Cassimally	Designing the Internet of Things	Wiley
2	CunoPfister	Getting Started with the Internet of Things.	Oreilly

**Course Focus:** Employability

#### Websites of Interest:

1. <https://dzone.com/iot-developer-tutorials-tools-news-reviews>
2. <https://www.ibm.com/blogs/internet-of-things/>



**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - III Semester**

**Course Code: 20CS3T1**

**Title: Internet of Things (IoT)**

(w.e.f admitted batch 2020-21)

**Time: 3 Hours**

**Max. Marks: 70**

**Answer ALL questions**

**(10×2 = 20 Marks)**

7. a) What is *M2M Communication*. (BTL1)
- b) What are *Connected Devices*? (BTL1)
- c) Write about *modified ISO*. (BTL1)
- d) What is a *Gateway*? (BTL1)
- e) What is *Communication Protocol*? (BTL1)
- f) What is *Resource and Resource Repository*? (BTL1)
- g) What is *Header*? Explain *TCP Header*. (BTL1)
- h) What is *Protocol Data Unit and Maximum Transferable Unit*. (BTL1)
- i) Write about *Event Data*. (BTL1)
- j) What are *Active and Passive Devices*? (BTL1)

**Answer Five Questions Choosing One Question from Each Unit.**  
**All Questions Carry Equal Marks. (5×10 = 50 Marks)**

UNIT – I

2. a) Explain an overview of IOT. (BTL2)
- (or)
- b) Explain *implementation of IOT in Smart Cities*. (BTL2)

UNIT – II

3. a) Explain various *Layers & Design Standardization Principles* of IOT. (BTL2)
- (or)
- b) Explain different *communication technologies* used in IOT. (BTL2)

UNIT – III

4. a) What are *Web Communication Protocols* for Connected Devices? (BTL1)
- (or)
- b) What are various *Design Principles* for the Web Connectivity? (BTL1)

UNIT – IV

5. a) Explain in detail *Internet Connectivity Principles*. (BTL5)
- (or)
- b) Explain any two *Application Layer Protocols*. (BTL5)

UNIT – V

6. a) Illustrate *Business Models* for *Business Processes* in the Internet of Things. (BTL2)
- (or)
- b) Explain *Integration and Enterprise Systems*. (BTL2)



**A.G & S.G Siddhartha Degree College of Arts & Science**  
Vuyyuru – 521165  
(An Autonomous College in the jurisdiction of Krishna University)  
NAAC reaccredited at ‘A’ level

**Programme: M.Sc.(Computer Science)**

**Title of the Paper: Cryptography & Network Security**

**Semester: III**

Course Code	20CS3T2	Course Delivery Method	Class Room / Blended Mode
Credits	4	CIA Marks	30
No. of Lecture Hours /	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-22	Year of Offering: 2021-22	Year of Revision: 2021-22	Percentage of Revision: 10

**Course Objective:** To understand and gain knowledge on *Computer & Network Security, Number Theory, Classical Encryption Techniques, Advanced Encryption Standard and Random Bit Generation and Stream Ciphers, Number Theory, Public Key Cryptography and RSA, Other Public-Key Crypto Systems and Message Authentication Codes, Digital Signatures, Key Management and Distribution and User Authentication, Transport Level Security, Electronic Mail Security and IP Security and Intruders and Firewalls.*

**Course Outcomes:** On successful completion of this course, the students will be able to:

CO1 : Understand *Computer & Network Security Concepts, Classical Encryption Techniques and Advanced Encryption Standard.*

CO2 : Gain knowledge on *Number Theory, Public Key Cryptography and RSA, Other Public-Key Crypto Systems and Message Authentication Codes.*

CO3 : Know *Digital Signatures, Key Management and Distribution and User Authentication.*

CO4 : Understand *Transport Level Security, Electronic Mail Security and IP Security.*

CO5 : Gain knowledge about *Intruders and Firewalls.*

## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Computer &amp; Network Security Concepts:</b> Computer Security Concepts, The OSI Security Architecture, Security Attacks, Security Services, Security Mechanisms, A Model for Network Security.</p> <p><b>Classical Encryption Techniques:</b> Symmetric Cipher Model, Substitution Techniques, Transposition Techniques</p> <p><b>Advanced Encryption Standard:</b> AES Structure, An AES Example, AES Implementation. Random Bit Generation and Stream Ciphers: Principles of Pseudo Random Number Generation, Pseudo Random Number Generators.</p>	12
II	<p><b>Introduction to Number Theory:</b> Divisibility and the Division Algorithm, The Euclidean Algorithm, Modular Arithmetic, Prime Numbers, Fermat's and Euler's Theorems, Testing for Primality, The Chinese Remainder Theorem, Discrete Logarithms.</p> <p><b>Public Key Cryptography and RSA:</b> Principles of Public Key Crypto Systems, The RSA Algorithm.</p> <p><b>Other Public-Key Crypto Systems:</b> Key Management, Diffie-Hellman Key Exchange, Elliptic Curve Arithmetic, Elliptic Curve Cryptography.</p> <p><b>Message Authentication Codes:</b> Message Authentication Requirements, Message Authentication Functions, Requirements for Message Authentication Codes, Security of MACs, MACs Based on Hash Functions: HMAC.</p>	12
III	<p><b>Digital Signatures:</b> Digital Signatures, NIST Digital Signature Algorithm.</p> <p><b>Key Management and Distribution:</b> Symmetric Key Distribution Using Asymmetric Encryption, Distribution of Public Keys.</p> <p><b>User Authentication:</b> Kerberos, Remote User-Authentication Using Asymmetric Encryption.</p>	12
IV	<p><b>Transport Level Security:</b> Transport Layer Security.</p> <p><b>Electronic Mail Security:</b> S/MIME, Pretty Good Privacy.</p> <p><b>IP Security:</b> IP Security Overview, IP Security Policy, Encapsulating Security Payload, Combining Security Associations.</p>	12
V	<p><b>Intruders:</b> Intruders, Intrusion Detection, Password Management.</p> <p><b>Firewalls:</b> The Need for Firewalls, Firewall Characteristics and Access Policy, Types of Firewalls.</p>	12

Prescribed Text Book			
	Author	Title	Publisher
1	William Stallings	Cryptography and Network Security	Pearson, Seventh Edition, 2017

<b>Reference Text Book</b>			
	Author	Title	Publisher
1	William Stallings	Cryptography and Network Security	Pearson, Sixth Edition, 2014
2	William Stallings	Network Security Essentials- Applications and Standards	Pearson Education (2007), Third Edition.
3	Chris McNab	Network Security Assessment	OReilly (2007), 2 <sup>nd</sup> Edition
4	Jon Erickson	Hacking-The Art of Exploitation	Press (2006), SPD
5	Neal Krawety	Introduction to Network Security	Thomson (2007).
6	Ankit Fadia	Network Security-AHackers Perspective	Macmillan (2008)
7	Behrouz A Forouzan, Debdeep Mukhopadhyay	Cryptography and Network Security	MCGraw-Hill, Indian Special Edition, Third Edition, 2015

**Course has focus on :** Employability

**Websites of Interest :**

1. [https://www.pearsonhighered.com/assets/hip/us/hip\\_us\\_pearsonhighered/preface/0132775069.pdf](https://www.pearsonhighered.com/assets/hip/us/hip_us_pearsonhighered/preface/0132775069.pdf)
2. <http://faculty.mu.edu.sa/public/uploads/1360993259.0858Cryptography%20and%20Network%20Security%20Principles%20and%20Practice,%205th%20Edition.pdf>

**Co-curricular Activities :** Programming Contests, Hackathons & Quiz.

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - III Semester**

**Course Code: 20CS3T2      Title: CRYPTOGRAPHY & NETWORK SECURITY**  
**(w.e.f admitted batch 2020-21)**

**Time: 3 Hours**

**Max. Marks: 70**

**Answer ALL questions**

**(10×2 = 20 Marks)**

- 1) a) What is *Caesar Cipher*? (BTL1)
- b) Write any two characteristics of Randomness. (BTL1)
- c) What is the Purpose of the *Euclidean Algorithm*? (BTL1)
- d) What is Message Encryption? (BTL1)
- e) What is the difference between *Symmetric Key Distribution & Asymmetric Key Distribution*? (BTL1)
- f) What is *Mutual Authentication*? (BTL1)
- g) State any two Protocols of *Transport Layer Security*. (BTL1)
- h) What is *Pretty Good Privacy*? (BTL1)
- i) What is *Firewall*? (BTL1)
- j) State any two *Intrusion Detection Techniques*. (BTL1)

**Answer Five Questions Choosing One Question from Each Unit.**  
**All Questions Carry Equal Marks.      (5×10 = 50 Marks)**

**UNIT- I**

- 2) a) Explain various *Security Attacks* and *Security Services*. (BTL2) 10 Marks  
(or)
- b) Explain *AES Encryption* and *Decryption* Process. (BTL2) 10 Marks

**UNIT- II**

- 3) a) Illustrate *Diffie-Hellman Key Exchange*. (BTL2) 10 Marks  
(or)
- b) Explain *Internal and External Error Control* in Message Authentication Functions. (BTL2)  
10 Marks

**UNIT-III**

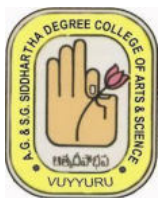
- 4) a) Explain *NIST Digital Signature Algorithm* with diagram. (BTL5) 10 Marks  
(or)
- b) Explain *Kerberos* in detail. (BTL5) 10 Marks

**UNIT-IV**

- 5) a) Explain *Confidentiality* and *Authentication* in S/MIME. (BTL5) 10 Marks  
(or)
- b) Illustrate *Overview of IP Security*. (BTL5) 10 Marks

**UNIT-V**

- 6) a) Discuss what are the problems that may intruder create and explain how to overcome those problem?  
(BTL6) 10 Marks  
(or)
- b) Discuss *Various Types of Firewalls*. (BTL6) 10 Marks



**A.G & S.G Siddhartha Degree College of Arts & Science**  
Vuyyuru – 521165  
(An Autonomous College in the jurisdiction of Krishna University)  
NAAC reaccredited at 'A' level

**Programme: M.Sc.(Computer Science)**

**Title of the Paper: Design & Analysis of Algorithms**

**Semester: III**

Course Code	20CS3T3	Course Delivery Method	Class Room / Blended Mode
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-22	Year of Offering: 2021-22	Year of Revision: 2021-22	Percentage of Revision: Nil

**Course Objective:** The objective of this course is to develop proficiency in *Problem Solving and Programming*, To *Perform Analysis of various Algorithms in regard to Time and Space Complexity*, Gain good understanding of *Applications of Data Structures*, To develop a base for *Advanced Study in Computer Science*, To apply *Design Techniques* to solve different types of problems as per their *Complexity* and Develop *ability to segregate NP-Hard and NP-Complete problems*.

**Course Outcomes:** On successful completion of this course, the students will be able to:

**CO1 :** Understand *Basic Ideas* about *Analysis of Algorithms and the Concept of Data Structures*.

**CO2 :** Know *Divide and Conquer*, *Greedy Methods* and *Solving Various Problems* by applying them.

**CO3 :** Apply *Dynamic Programming Method* and *Basic Traversal and Search Techniques* to solve various Problems.

**CO4 :** Understand *Backtracking* and *Branch and Bound* Techniques to Design Algorithms.

**CO5 :** Categorize *NP-Hard* and *NP-Complete* Problems.

## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Introduction:</b> What is Algorithm, Algorithm Specification Pseudo code Conventions, Recursive Algorithms, Performance Analysis: Space Complexity Time Complexity, Asymptotic Notation, Performance Measurement, Randomized Algorithms: Basics of Probability Theory, Randomized Algorithms Identifying the Repeated Element, Primality Testing: Advantages and Disadvantages.</p> <p><b>Elementary Data Structures:</b> Stacks and Queues, Trees: Terminology, Binary Trees, Dictionaries: Binary Search Trees, Priority Queues, Heaps , Heapsort , Sets and Disjoint Set Union: Introduction-Union and Find Operations, Graphs: Introduction, Definitions, Graph Representations.</p>	10
II	<p><b>Divide-and-Conquer:</b> General Method, Defective Chess Board, Binary Search, Finding Maximum and Minimum, Merge Sort, Quick Sort, Selection Problem, Strassen's Matrix Multiplication, Convex Hull: Some Geometric Primitives, The Quick Hull Algorithm, Graham's Scan, An <math>O(n \log n)</math> Divide and Conquer Algorithm.</p> <p><b>The Greedy Method:</b> The General Method, Container Loading, Knapsack Problem, Tree Vertex Splitting, Job Sequencing with Deadlines, Minimum Cost Spanning Trees: Prim's Algorithm, Kruskal's Algorithm, Optimal Storage on Tapes, Optimal Merge Patterns, Single Source Shortest Paths.</p>	14
III	<p><b>Dynamic Programming:</b> The General Method, Multi Stage Graphs, All Pairs Shortest Paths, Single Source Shortest Paths, Optimal Binary Search Trees, String Editing -0/1 Knapsack, Reliability Design, The Traveling Sales Person Problem, Flow Shop Scheduling.</p> <p><b>Basic Traversal and Search Techniques:</b> Techniques for Binary Trees, Techniques for Graphs: Breadth First Search and Traversal-Depth First Search, Connected Components and Spanning Trees, Bi-Connected Components and DFS.</p>	17
IV	<p><b>Backtracking:</b> The General Method, The 8-Queens Problem, Sum of Subsets, Graph Coloring, Hamiltonian Cycles, Knapsack Problem.</p> <p><b>Branch and Bound :</b> The Method: Least Cost Search, The 15 Puzzle Control Abstractions for LC Search, Bounding, FIFO Branch and Bound , LC Branch and Bound, 0/1 Knapsack Problem, LC Branch and Bound Solution, FIFO Branch and Bound Solution, Traveling Sales person.</p>	11
V	<p><b>NP-Hard and NP-Complete Problems:</b> Basic Concepts: Non Deterministic Algorithms, The Classes NP Hard and NP Complex, Cook's Theorem, NP Hard Graph Problems, Clique Decision Problem, Node Cover Decision Problem Chromatic Number Decision Problem, Directed Hamiltonian Cycle, Traveling Sales Person Decision Problem, AND/OR Graph Decision Problem, NP-Hard Scheduling Problems, Scheduling Identical Processors, Flow Shop Scheduling, Job Scheduling, NP-Hard Code Generation Problems, Code Generation With Common Sub Expressions, Implementing Parallel Assignment Instructions, Some Simplified NP-Hard Problems.</p>	8

#### Prescribed Text Book

S.No	Author	Title	Publisher
1	Sartaj Sahni	Fundamentals of Computer Algorithms	Second Edition, Universities Press (2008)

Reference Text Books			
S.No.	Author	Title	Publisher
1	Anany Levitin	Introduction to the Design & Analysis of	Second Edition, Pearson
2	I.Chandra Mohan	Design and Analysis of Algorithms	PHI
3	Prabhakar Gupta, Vineet Agrawal	Design and Analysis of Algorithms	PHI
4	Parag Himanshu, Dave	Design and Analysis of Algorithms	Pearson Education (2008)

**Course Focus:** Foundation / Skill Development.

**Reference Websites :**

1. <https://epgp.inflibnet.ac.in/Home>
2. <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-046j-design-and-analysis-of-algorithms-spring-2015/lecture-notes/>
3. [https://www.cukashmir.ac.in/cukashmir/User\\_Files/imagefile/DIT/StudyMaterial/DAA/DAA\\_UNIT-I\\_6th-Sem\\_StudyMaterial.pdf](https://www.cukashmir.ac.in/cukashmir/User_Files/imagefile/DIT/StudyMaterial/DAA/DAA_UNIT-I_6th-Sem_StudyMaterial.pdf)







**A.G & S.G Siddhartha Degree College of Arts & Science**  
Vuyyuru – 521165  
(An Autonomous College in the jurisdiction of Krishna University)  
NAAC reaccredited at ‘A’ level

**Programme: M.Sc. (Computer Science)**

**Title of the Paper: Data Mining Techniques**

**Semester: III**

Course Code	20CS3T4	Course Delivery Method	Class Room / Blended Mode
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-22	Year of Offering: 2021- 22	Year of Revision: 2021-22	Percentage of Revision: Nil

**Course Objective:**

To understand and gain knowledge on *Basic Concepts, Applications, Techniques of Data Mining, Data Warehouse Architecture and its Components, Schemas, Different OLAP Operations, Characterize The Kinds of Patterns that can be discovered by Association Rule Mining, Data Classification and Prediction Techniques, Identify the Similarities among the data Using Clustering Algorithms and Outlier Analysis.*

**Course Outcomes:** On successful completion of this course, the students will be able to

**CO1:** Understand the *Basics of Data Mining and Data Pre-Processing Techniques.*

**CO2:** Aware of constructing the *Data Warehouse, OLAP and relevant Data Model Concepts.*

**CO3:** Understand the *Frequent Itemset Mining Methods* and Different Levels in Association Rules.

**CO4:** Understand the *Basic Concepts in Classification and Advanced Classification Methods* by implementing *Various Algorithms.*

**CO5:** Find the similarities among the data using *Clustering Algorithms and Outlier Analysis.*

## Syllabus

### Course Details

Unit	Learning Units	Lecture Hours
I	<p><b>Introduction:</b> What is Data mining?, What Kind of Data can be Mined, What kinds of Patterns can be Mined, Major Issues in Data Mining.</p> <p><b>Data Preprocessing:</b> Data Preprocessing : An Overview, Data Cleaning, Data Integration, Data Reduction-Overview of Data Reduction Strategies, Attribute Subset Selection, Regression and Log Linear Models, Histograms and Clustering, Data Transformation : Data Transformation Strategies Overview, Data Transformation by Normalisation, Discretization by Binning.</p>	12
II	<p><b>Data Warehousing and OLAP:</b> Data Warehouse : Basic Concepts, What Is a Data Warehouse?, Difference between Operational Database Systems and Data Warehouses, Why have a separate Data Warehouse?, Data Warehousing : A Multiered Architecture, Data Warehouse Models, Extraction, Transformation and Loading, Metadata Repository, Data Warehouse Modeling : Data Cube and OLAP-A Multidimensional Data Mode-From Tables and Spreadsheets to Data Cubes, Stars, Snowflakes and Fact Constellations : Schemas for Multidimensional Data Models , Dimensions : The Role of Concept Hierarchies, Measures: their categorisation and computation, Typical OLAP Operations in the Multidimensional Data Model, A Starnet Query Model for Querying Multidimensional Databases.</p>	12
III	<p><b>Mining Frequent Patterns, Associations:</b> Basic Concept, Market Basket Analysis : A Motivational Example, Frequent Item Sets, Closed Item Sets and Association Rules, Frequent Item Set Mining Methods.</p> <p><b>Advanced Pattern Mining:</b> Pattern Mining : A Road Map, Pattern Mining in Multilevel, Multidimensional Space, Mining Multilevel Association Rules, Mining Multi Dimensional Associations, Mining Quantitative Association Rules.</p>	12
IV	<p><b>Classification: Basic Concepts:</b> What is Classification?, General Approaches to Classification, Decision Tree Induction, Attribute Selection Measures, Tree Pruning, Scalability and Decision Tree Induction, Bayes Classification Methods, Bayes Theorem, Navie Bayesian Classification.</p> <p><b>Classification: Advanced Methods:</b> Bayesian Belief Networks, Concepts and Mechanisms, Training Bayesian Belief Networks, Classification by Back Propagation.</p>	12
V	<p><b>Cluster Analysis Introduction:</b> What is Cluster Analysis?, Requirements for Cluster Analysis, A Partitioning Methods : K-Means, K-Medoid, Hierarchical Methods : Agglomerative versus Divisive Hierarchical Clustering, Distance Measures in Algorithmic Methods, BRICH : Multiphase Hierarchical Clustering using Clustering Feature Trees, Chameleon Hierarchical Clustering, Density Based Methods : DBSCAN.</p> <p><b>Outlier Detection:</b> What is Outliers Analysis?, Types of Outliers, Challenges of Outlier Detection.</p>	12

Text Books			
	Author	Title	Publisher
1	Jiawei Han, Micheline Kamber	Data mining : Concepts & Techniques	Morgan Kaufmann 3 <sup>rd</sup> Edition Chapter-1 1.2,1.3,1.4,1.7 Chapter-3 3.1,3.2,3.3,3.4(3.4.1,3.4.4,3.4.5,3.4.6,3.4.7) Chapter-4 4.1 to 4.2 Chapter-6 6.1 to 6.2 Chapter-7 7.1,7.2(7.2.1 to7.2.3) Chapter-8 8.1,8.2(8.2.1,8.2.2,8.2.3,8.2.4),8.3 Chapter-9 9.1 to 9.2 Chapter-10 10.1,10.2,10.3(10.3.1,10.3.2,10.3.3,10.3.4),10.4(10.4.1) Chapter-12 12.1(12.1.1,12.1.2,12.1.3)

Reference Books			
	Author	Title	Publisher
1	Ralph Kimball	The Data Warehousing Toolkit	Wiley
2	S.N.Sivanandam, S.Sumathi	Data Mining-Concepts, Tasks and Techniques	Thomson

**Websites of Interest:**

1. [www- db.stanford.edu / ullman/mining/mining.html](http://www-db.stanford.edu/~ullman/mining/mining.html) : Data mining lecture notes.
2. [ocw.mit.edu/ocwweb/slon-School-of-management/15-062Data-Mining Spring2003/course](http://ocw.mit.edu/ocwweb/slon-School-of-management/15-062Data-Mining Spring2003/course)

**Course Focus:** Foundation / Employability / Skill Development.

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**M.Sc., (Computer Science) Programme - III Semester**  
**Course Code: 20CS3T4 Title: DATA MINING TECHNIQUES**  
**(w.e.f admitted batch 2020-21)**

**Time: 3 Hours**  
**Answer ALL questions**

**Max. Marks: 70**  
**(10×2 = 20 Marks)**

1. a) Difference between *Data Mining* and *KDD* (BTL4)
- b) What is meant by *Data Preprocessing*? (BTL1)
- c) Define *Multidimensional Data model*. (BTL1)
- d) OLAP versus OLTP (BTL4)
- e) Give one example for *Closed Itemset* and *Maximal Frequent Itemset* (BTL1)
- f) What is meant by *Association Rule*? (BTL1)
- g) Explain *Bayes Theorem*. (BTL2)
- h) Define *Classification* with Example. (BTL1)
- i) What are the requirements of *Cluster Analysis*? (BTL1)
- j) What is meant by *Outliers*? (BTL1)

**Answer Five Questions Choosing One Question from Each Unit.**

**All Questions Carry Equal Marks.**

**(5×10 = 50 Marks)**

**UNIT – I**

2. A) Define Data Mining. What kinds of Patterns can be mined in *Data Mining*. 10M (BTL1)  
(or)
- B) Define *Data Integration*. What are the *Different Techniques used in Data Integration*. 10M (BTL1)

**UNIT – II**

3. A) Define *Data Warehouse*. Explain *Data Warehouse Architecture* with neat Diagram. 10M (BTL1)  
(or)
- B) What are the different types of *Schemas* used in *Multi Dimensional Data Model*? 10M (BTL1)

**UNIT – III**

4. A) Explain *Aprior Algorithm* with Example. 10M (BTL2)  
(or)
- B) Explain *Multi Level and Multi Dimensional Association Rules* with Examples. 10M (BTL2)

**UNIT – IV**

5. A) Explain *Decision Tree Induction Algorithm* with Example. 10M (BTL5)  
(or)
- B) Explain *Naïve Bayes Classification* with Example. 10M (BTL5)

**UNIT – V**

6. A) Explain *Different Partitioning Methods* used in *Cluster Analysis*. 10M (BTL2)  
(or)
- B) Explain in detail about *Hierarchical Clustering*. 10M (BTL2)



**A.G & S.G Siddhartha Degree College of Arts & Science**  
Vuyyuru – 521165  
(An Autonomous College in the jurisdiction of Krishna University)  
NAAC reaccredited at ‘A’ level

**Programme: M.Sc.(Computer Science)**

**Title of the Paper: Web Technologies Lab**

**Semester: III**

Course Code	20CS3L1	Course Delivery Method	Class Room / Blended Mode
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	8	Semester End Exam Marks	70
Total Number of Lecture Hours	90	Total Marks	100
Year of Introduction : 2021-22	Year of Offering: 2021- 22	Year of Revision: 2021-22	Percentage of Revision: 0%

**Course Objective:** Able to build functional *Web Applications using HTML*, Able to use *JavaScript and DHTML* for *Web Designing*, Able to code using *XML and PHP* for *Integrating with Web Pages*, Create *Dynamic Web Pages* where in client interaction is facilitated using advanced server technology like *JSP* and *Web Pages with Database Connectivity using PHP*.

**Course Outcomes:** On successful completion of the course student will be able to:

**CO1:** Build functional *Web Applications HTML*.

**CO2:** Incorporates *Multimedia Capabilities* and *Web Page Designs* using *Cascading Style Sheets*.

**CO3:** Code *Client Server Interaction Programs* using *Java Based Server Technology* named *Servlets*.

**CO4:** Create *Dynamic Web Pages* where in *Client Interaction* is facilitated using *Advanced Server Technology* like *JSP*.

**CO5:** Integrate *Offline Data Storage, Background Processes* and *APIs* using *Database Connectivity* and *ASP*.

## Syllabus

### Course Details

#### HTML:

1. Develop HTML code to provide intra document linking. (BTL6)
2. Develop HTML code to provide inter document linking. (BTL6)

- Develop a program to implement the three types of lists. (BTL6)
  - Create a HTML page using frames. (BTL6)
  - Develop a program to embed college picture into your web page and develop a short note on your college using paragraph tag. (BTL6)
6. Illustrate a suitable example; depict how we can align text using a table tag as follows. (BTL2)

II M.C.A	Pass percentage=95%
	Fail percentage=5%
III M.C.A	Pass percentage=97%
	Fail percentage=3%

7. Develop a program to create the time table as follows: (BTL6)

	1	2	3		4	5	6
<b>MON</b>	<-----WEB LAB----->			B R E A K	SE	WEB	PPL
<b>TUE</b>	UML	CRY	SE		<-----VB LAB----->		
<b>WED</b>	WEB	SE	UML		CRY	PPL	
<b>THU</b>	CRY	WEB	PPL		<-----WEB LAB----->		
<b>FRI</b>	<-----VB LAB----->				PPL	WEB	UML
<b>SAT</b>	SE	CRY	UML		<-----SEMINARS----->		

8. Create a Registration form that interacts with the user. Collect login name, password, date of birth, sex, address, qualification and display a "Thank you for registering" message when the user submits the form. (BTL6)

Login name:    
 Enter Password:    
 Reenter Password:    
 Birthdate:    
 Sex:  Male  Female  
 Enter Address:   
 Enter qualification:

**Java Script:**

9. Develop a script to compare two strings using String object. (BTL6)
10. Develop a script to generate random numbers within 1 to 10 and display the numbers in a table. (BTL6)
11. Develop a Java Script to update the information into the array, in the “onClick” event of the button “Update”. (BTL6)
12. Create a web page for a shopping mall that allows the user to tick off his purchases and obtain the bill with the total being added up simultaneously. (BTL6)

Item details	Price of item	Click here to select
	8399	<input type="checkbox"/>
	5000	<input checked="" type="checkbox"/>
	450	<input checked="" type="checkbox"/>
	399	<input type="checkbox"/>
YOUR TOTAL BILL IS 5450		

13. Develop a script to find the duplicate elements of an array. (BTL6)
14. Develop a script which generates a different greeting each time the script is executed. (BTL6)
15. Develop a JavaScript to check the number is Armstrong number or not by getting the number from textbox and the result is displayed in a alert dialog box. (BTL6)
16. Develop a java script code that accepts user name and password from user, Check their correctness and display appropriate alert messages. (BTL6)

**DHTML:**

17. Create an inline style sheet. Illustrate the use of an embedded style sheet. (BTL6)
18. Create an external style sheet to illustrate the “Font” elements. (BTL6)
19. Develop a program to switch on and off light using onClick event. (BTL6)
20. Illustrate different types of filters (at least six) on a sample text. (BTL2)
21. Develop a program to illustrate tabular data control for data binding. (BTL6)



**XML:**

22. Create a small XML file designed to contain information about student performance on a module. Each student has a name, a roll number, a subject mark and an exam mark. (BTL6)
23. Create a internal DTD file. (BTL6)
24. Create an external DTD file. (BTL6)
25. Create a XSLT style sheet to display the student data as an HTML table. (BTL6)

**PHP:**

26. Illustrate PHP declarations and expressions to find factorial of a given number using. (BTL2)
27. Develop a PHP program that interacts with the user .Collect first name last name and date of birth and displays that information back to the user. (BTL6)
28. Develop a PHP program to connect MySQL Database.(BTL6)

**JSP:**

29. Develop a program to implement JSP directives. (BTL6)
30. Develop a JSP program for session tracking. (BTL6)

Prescribed Textbook			
	Author	Title	Publisher
1	N.P.Gopalan, J.Akilandeswari	Web Technologies-A Developer's Perspective	PHI(2008)
2	Harvey M. Deitel and Paul I. Deitel	Internet and World Wide Web How To Program, 5e	Prentice Hall; 4th edition

**Course Focus:** Employability

**Websites of Interest:**

1. <https://www.w3schools.com>
2. <https://www.edx.org/learn/web-development>
3. <https://www.codecademy.com/learn/paths/web-development>



**A.G & S.G Siddhartha Degree College of Arts & Science**  
Vuyyuru – 521165  
(An Autonomous College in the jurisdiction of Krishna University)  
NAAC reaccredited at ‘A’ level

**Programme: M.Sc.(Computer Science)**

**Title of the Paper: Data Mining Lab**

**Semester: III**

Course Code	20CS3L2	Course Delivery Method	Class Room / Blended Mode
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	8	Semester End Exam Marks	70
Total Number of Lecture Hours	90	Total Marks	100
Year of Introduction : 2021-22	Year of Offering : 2021-22	Year of Revision : 2021-22	Percentage of Revision: Nil

**Course Objective:**

The main objective of this lab is to impart the knowledge on *How to implement Data Mining Algorithms using Various Tools* and *How to characterize the kinds of Patterns* that can be discovered by *Association Rule Mining, Classification, Clustering, Identifying Outliers* and *Emphasize Hands-on Experience* working with all *Real Time Data Sets*.

**Course Outcomes:** On successful completion of this course, the students will be able to

**CO1:** Understand the *Various Kinds of Tools*.

**CO2:** Apply *Mining Techniques* for *Realistic Data*.

**CO3:** Understand the *Basic Concepts* in R and *Weka*.

**CO4:** Understand how to import and export *CSV Files* and *Package* installation in R.

**CO5:** Develop and visualization of *Data Mining Algorithms* in R.

**Using Weka Tool:**

1. How to create and load *Data Set* in Weka. (BTL1)
2. Interpret all the *Categorical (or Nominal) Attributes* and the *Real-Valued Attributes* separately. (BTL2)
3. Construct *Association Rules* using Weka.( BTL6)
4. Construct *Multilayer Perceptron* or *Neural Network*. (BTL6)
5. Construct *Time Series Forecasting* using Weka. (BTL6)
6. Demonstration of preprocessing to remove *Attributes, Instances* and *Perform Discretization* using dataset *weather.arff*. (BTL2)
7. Create *K-Mean Clustering* using *Weka*.( BTL6)
8. Develop *Decision Tree* by training data set using *Weka*. (BTL6)
9. Create *Hierarchical Clustering* using *Weka*. (BTL6)
10. Identifying and removing *Outliers* using *Weka*. (BTL1)

### Using R Programming:

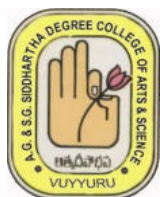
1. How to import data into R from text and excel files using *read.table()* and *read.csv* functions. (BTL1).
2. Create *Association Rules* using *Aprior Algorithm* in R. (BTL6)
3. Construct *Multilayer Perceptron* or *Neural Network* using R. (BTL6)
4. Apply *Time Series Analysis* using R. (BTL3)
5. Apply *Time Series Forecasting* using R. (BTL3)
6. Apply *Time Series Decomposition* using R. (BTL3)
7. Create *K-Means Clustering Algorithm* using R. (BTL6)
8. Construct *Decision Tree* in R using package *party*. (BTL6)
9. Create *Hierarchical Clustering* using R. (BTL6)
10. Create Hierarchical Clustering with Euclidean Distance using R (BTL6)
11. Examine *K-Medoids* clustering using R. (BTL4)
12. *Detecting and Removing* outliers using R. (BTL1)
13. Construct *Density Based Clustering* using R. (BTL6)
14. Illustrate *Linear Regression* using R. (BTL2)
15. Illustrate *Multiple Regression* using R. (BTL2)
16. Illustrate Logistic Regression using R. (BTL2)
17. Construct *Outlier Detection by Clustering* using R. (BTL6)
18. Detecting and Removing Missing values in R. (BTL1)
19. Create different kinds of *Charts* using *Sample Data Sets* in R. (BTL6)
20. Create *Word Cloud* using R. (BTL6)

### Websites of Interest :

1. <https://www.cs.waikato.ac.nz/ml/weka>.
2. <https://weka.wikispaces.com>
3. <https://www.rdocumentation.org/packages/stats/versions/3.6.2>
4. <http://www.r-bloggers.com/>

**Course Focus:** Foundation / Employability / Skill Development.

**APPENDIX - III**  
**OPEN ELECTIVES OFFERED BY COMPUTER SCIENCE DEPARTMENT**



**A.G & S.G Siddhartha Degree College of Arts & Science**  
**Vuyyuru – 521165**  
**(An Autonomous College in the jurisdiction of Krishna University)**  
**NAAC reaccredited at ‘A’ level**

**Programme:**

**Title of the Paper:** **Visual Analytics for Executives**

**Semester: III**

Course Code	21CS3OEL1	Course Delivery Method	Face-to-face/Blended Mode
Course Category	Open elective	Lecture-Tutorial-Practice	2-0-4
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	6	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-22	Year of Offering: 2021-22	Year of Revision: 2021-22	Percentage of Revision: Nil

**Course Objectives :** This Course focuses to know the *Importance of Visualization in the world of Data Analytics and Prediction, To handle Data Sources in Tableau, To get familiarized about creating visualization using different Types of Charts, To gain knowledge about using Maps in Tableau, To gain knowledge about Analysis, To design Interactive Dash Boards.*

**Course Outcomes :** At the end of this course, students should be able to:

CO1 : Able to know the importance of *Visualization* and connect *Different Data Sources in Tableau.*

CO2 : Able to create *Charts* in *Tableau.*

CO3 : Able to implement *Aggregate Functions, Calculated Fields, Table Calculations* and *Level of Detail Calculations.*

CO4 : Able to implement *Maps* and *Advance Analytic.*

CO5 : Able to create *Interactive Dash Boards.*

<b>Syllabus</b>		
<b>Unit</b>	<b>Learning Units</b>	<b>Lecture Hours</b>
I	<p><b>Introduction and Getting Started with Tableau:</b> The Advantages of a Modern Analytics Platform, The Tableau Application Suite, Installing Tableau Desktop Data Preparation, The Sample Dataset, The Tableau Workspace, Working With Measures and Dimensions. Working With Marks, Saving, Opening, And Sharing Your Workbooks.</p> <p><b>Adding Data Sources in Tableau:</b> Setting up a Data Connector, Selecting Data Tables, Joins, Unions, Data Extracts and Live Connections, Editing The Model's Metadata, Data Types, Adding Hierarchies, Calculated Fields and Table, Calculations, Data Collection.</p>	12
II	<p><b>Creating Data Visualizations:</b> Chart Types, Ready, Set, Show Me, Bar Charts, Legends, Filters and Hierarchies,, Line Charts, Highlight Tables, Heatmaps, Bullet Charts, Cumulative Sums With Waterfall Charts, Reflection, The Anatomy of A Tableau Visualization.</p>	12
III	<p><b>Aggregate Functions, Calculated Fields, and Parameters:</b> Aggregate Functions, Calculated Fields, Aggregations in Calculated Fields, Text Operators, Date Fields, Logical Functions In Calculated Fields, Parameters, Searching Text Fields.</p> <p><b>Table Calculations and Level of Detail Calculations:</b> Different Types of Calculations, Quick Table Calculations, Customized Table Calculations, Level of Detail Expressions.</p>	12
IV	<p><b>Maps:</b> Symbol Maps, Filled Maps, Density Maps, Map Layers, Maps With Pie Charts, Viz in Tooltip.</p> <p><b>Reflection:</b> The Anatomy of a Tableau Map, Alternative Map Services, Mapbox Maps, Spatial Data.</p> <p><b>Advanced Analytics:</b> Trends, Forecasts, Clusters and Other Statistical Tools, Overview of The Tableau Analytics Pane, Constant, Average, Reference Lines, Trend Lines, Forecasts, Cluster Analysis.</p>	12
V	<p><b>Interactive Dashboards:</b> Preliminary Considerations, Creating a New Dashboard, The Dashboard Pane, Placing Charts on the Dashboard, Dashboard Titles, Navigation Buttons, Dashboard Actions.</p>	12

**Course has focus on :** Employability

**Websites of Interest :**

1. Visual Analytics in Tableau | <https://www.youtube.com/watch?v=gEKQ3kigJsM>
2. Tableau Training for Beginners | Edureka <https://www.youtube.com/watch?v=aHaOlvR00So>
3. Tableau Training for Beginners | Simplilearn <https://www.youtube.com/watch?v=Wh4sCCZjOwo>
4. Tableau Full Course| <https://youtu.be/KA0QHWm0nWo>

**Co-curricular Activities :** Programming Contests, workshops & Quiz.

**Lab List:**

1. Tableau installation. (BTL1)
2. Tableau Introduction /Exploring Tableau. (BTL1)
3. Creating New Workbooks Opening Existing Workbooks in Tableau(BTL3)
4. Data Collection from various sources web/text/csv/JSON (BTL3)
5. Implementing joins and Unions (BTL3)
6. Creating Bar Chart. (BTL3)
7. Creating Pie Chart. (BTL3)
8. Creating Dual Axis Chart. (BTL3)
9. Creating Shared Axis. (BTL3)

10. Creating Cross Tab. (BTL3)
11. Creating Word Cloud. (BTL3)
12. Creating Scatter Plot. (BTL3)
13. Creating Bubble Chart. (BTL3)
14. Implementing Data Blending. (BTL3)
15. Implementing Word Cloud. (BTL3)
16. Implementing Aggregate Functions, Calculated Fields. (BTL3)
17. Implementing Table Calculations and Level of Detail Calculations. (BTL3)
18. Creating Maps. (BTL3)
19. Implementing Trend lines and analytics in Tableau. (BTL3)
20. Creating a Dash Board. (BTL3)

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
(An Autonomous College in the jurisdiction of Krishna University)  
----- Programme – III Semester

**Course Code: Title: Visual Analytics for Executives**  
(w.e.f admitted batch 2020-21)

**Time: 4 Hours**

**Answer ALL questions**

**Max. Marks: 70**

Part A  
Theory  
(5×4 = 20 Marks)  
Answer All Questions

1. What is *Dimension and Measure*? (BTL1)
2. Explain *Joining Tables* with *Tableau* with example. (BTL2)
3. Explain the role of *Table Data Extract*. (BTL2)
4. How to *Replace Tableau's Standard Maps*? (BTL1)
5. What is *Cluster Analysis*? (BTL2)

Part B (Practical)  
(2×25 = 50 Marks)  
Answer all Questions

1. a. Creating word clouds using Tableau. (BTL6)  
b. Create a dual axis chart using Tableau. (BTL6)
2. Creating a Simple Dash Board using Tableau. (BTL6)



**A.G & S.G Siddhartha Degree College of Arts & Science**  
**Vuyyuru – 521165**  
 (An Autonomous College in the jurisdiction of Krishna University)  
 NAAC reaccredited at ‘A’ level

**Programme:**

**Title of the Paper:** **Web Programming**

**Semester: III**

<b>Course Code</b>	<b>21CS3OEL2</b>	Course Delivery Method	Class Room / Blended Mode
Credits	4	CIA Marks	30
No. of Lecture Hours / Week	4	Semester End Exam Marks	70
Total Number of Lecture Hours	60	Total Marks	100
Year of Introduction : 2021-22	Year of Offering: 2021- 22	Year of Revision: 2021-22	Percentage of Revision: 0%

**Course Objective:** To provide knowledge on *Web Architecture, Web Services, Client Side and Server Side Scripting Technologies*, To focus on the development of *Web Based Information Systems and Web Services*, To provide skills to design *Interactive and Dynamic Web Sites*.

**Course Outcomes:** On successful completion of the course student will be able to:

CO1: Understand the *Web Architecture and Web Services*.

CO2: Design *Interactive Web Pages* using *HTML and Style Sheets*.

CO3: Design *Interactive Web Pages* using *Forms and Tables*.

CO4: Study about *CSS and XML*.

CO5: Create a *Website* using *Wix Platform*.

**Syllabus**

**Course Details**

Unit	Learning Units	Lecture Hours
I	<p><b>Introduction:</b> What is Internet, History of Internet, Internet Services and Accessibility, Uses of the Internet, Protocols, Web Concepts: The Client/Server Model, Retrieving Data from the Web, How the Web Works?, Web Browsers, Searching information on the Web, Internet Standards.</p> <p><b>Internet Protocols:</b> Internet Protocols, Host Names, Internet Applications And Application Protocols, Email Protocols.</p> <p><b>World Wide Web:</b> Basics of WWW and Browsing, URL, Types of Browsers, Features of Browsers.</p>	12



II	<p><b>Introduction to HTML:</b> HTML Document Structure, Creating Headings on Webpage.</p> <p><b>Working with Links:</b> Creating Hyper Link, Setting The Hyper Link Colors, Linking Different Sections of Web Page.</p> <p><b>Working with images:</b> Inserting an Image, Displaying alternate Text for an Image, Adding a Border, Aligning an Image, Using Image as Links, Image Maps.</p> <p><b>Working with tables:</b> Creating a Table, Specifying Caption to a Table, Adding a Table Heading and Border, Aligning a Table and Cell Content, Setting The Width of a Table And Table Columns.</p>	12
III	<p><b>Forms:</b> Creating Forms, Named Input Fields, The &lt;INPUT&gt; Tag, Multiple Lines Text Windows, Drop Down and List Boxes, Text, Text Area, Password, Button, Submit, Reset, Radio, Checkbox, Select Option, Labeling Input Fields, Grouping Related Fields, Disabled and Read Only Fields.</p> <p><b>Frames:</b> Introduction to Frames, Frames Document, The &lt;FRAMESET&gt; Tag, Nesting &lt;FRAMESET&gt; Tag, Placing Content in Frames with the &lt;FRAME&gt; Tag, Targeting Named Frames.</p>	12
IV	<p><b>CSS:</b> Introduction to Style Sheets, Inline Styles, External Style Sheets, Internal Style Sheets, Style Classes, Multiple Styles.</p> <p><b>XML:</b> Introduction, HTML vs. XML, Syntax of XML Document, XML Attributes, Use of Elements vs. Use of Attributes, XML Validation, Well Formed XML Documents, Valid XML Documents, XML DTD: Internal DTD, External DTD, The Buildings Blocks of XML Documents.</p>	12
V	<p><b>Make a Website with Wix:</b> Planning your Wix Website Design, Planning your Website Pages Working, Planning your Website Pictures, Videos and Logos, Wix Signup and Selecting a Premade or Blank Template.</p> <p><b>Building Your Wix Website:</b> Getting to know Wix platform, Getting to know Wix editor, Designing the Header, Footer and Menu, Background for Pages and Sections, Adding Text, Adding Photos, Adding Videos, Adding Icons, Shapes and Boxes, Adding Links, Adding Forms, Adding a Wix Store, Adding a Lightbox.</p>	12

Prescribed Textbook			
	Author	Title	Publisher
1	N.P.Gopalan, J.Akilandeswari	Web Technologies-A Developer's Perspective	PHI(2008)

Reference Text Book			
	Author	Title	Publisher
1	Harvey M. Deitel and Paul I. Deitel	Internet and World Wide Web How To Program, 5e	Prentice Hall; 4th edition
2	Thomas Powell	Web Design The Complete Reference	TMH Tata McGraw Hill

**Course Focus:** Employability

**Websites of Interest:**

1. <https://www.w3schools.com/html/default.asp>
2. <https://www.udemy.com/course/wix-master-course-make-a-website-in-1-day-with-wix>

**A.G & S.G Siddhartha Degree College of Arts & Science, Vuyyuru – 521165.**  
**(An Autonomous College in the jurisdiction of Krishna University)**

----- Programme - III Semester

**Course Code:**

**Title: Web Programming**

**(w.e.f admitted batch 2020-21)**

**Time: 3 Hours**

**Max. Marks: 70**

**Answer ALL questions**

**(10×2 = 20 Marks)**

1. a. What is *Web Browser*? Explain it? (BTL1)
- b. What is the *Functionality of HTTP*? (BTL1)
- c. Compare *Tag* and *Attributes* with example. (BTL2)
- d. Describe how you will *Embed Images* in Web document. (BTL1)
- e. Why do we use *<frameset>*? (BTL1)
- f. Write tag for *Drop Down*. (BTL1)
- g. Develop an *Inline Style Sheet* with suitable example.(BTL3)
- h. What is the *Syntax of XML*? (BTL1)
- i. How to *Plan a Website Design*? (BTL1)
- j. Explain *adding a photo* in *Wix Platform*. (BTL2)

**Answer Five Questions Choosing One Question from Each Unit.**

**All Questions Carry Equal Marks.**

**(5×10 = 50 Marks)**

**Unit I**

- 2) a) Explain various *Services Offered by Internet* and the *Types Of Internet Connections*. (BTL2)
- (or)
- b) Explain about *Internet Protocols*. (BTL2)

**Unit II**

- 3) a) What is the structure of *HTML Document*? Explain with example. (BTL1)
- (or)
- b) How to *Create A Table in HTML* with various *Attributes*? (BTL1)

**Unit III**

- 4) a) Discuss *Frame Set* and *Frame Attributes* by writing Program. (BTL6)
- (or)
- b) Develop a *Form* with *Various Tags* with suitable example. (BTL6)

**Unit IV**

- 5) a) What are *Types of CSS*? Explain with example. (BTL2)
- (or)
- b) What are *Well Formed* and *Valid XML Documents*? (BTL2)

**Unit V**

- 6) a) Explain Planning of *Wix Website Pages Working, Website Pictures, Videos and Logos*. (BTL5)
- (or)
- b) Explain *creating a Website* using *Wix Platform*. (BTL5)

**APPENDIX - IV**  
**ADD ON COURSE**

Applicable for the batch of students applicable during the Academic Year 2021-2022										
M.Sc.(Computer Science)										
III SEMESTER					Add on Course					
S.No.	Course Code	Title of the Course	Instructional Hours per Semester			Credits	Evaluation			Total Marks
			L	T	P		CIA Marks	SEE		
								Marks	Duration	
1	20CS3A1	PHP with My SQL Certification			45	4	Nil	Nil	3 Hours	Nil
CIA=Continuous Internal Assessment					SEE=Semester End Examinations					