

I B. Sc - BOTANY SYLLABUS THEORY

PAPER-II SEMESTER- II – W.E.F.2015-16

Paper –II T: Diversity of Archaeogniatae & plant Anatomy

Total hours of teaching 60 hrs @ 4 hrs per week

UNIT – I: BRYOPHYTA**(12hrs)**

1. **Bryophyta:** General characters and classification (up to classes).
2. **Structure, reproduction** and Life history of *Marchantia*, and *Funaria*
3. Evolution of Sporophyte in Bryophytes.

UNIT - II: PTERIDOPHYTA**(12 hrs)**

1. **Pteridophyta:** General characters and Classification (up to classes).
2. **Structure**, reproduction and life history of *Lycopodium*, and *Marsilea*
2. Heterospory and seed habit
4. Stelar Evolution in Pteridophytes

UNIT – III: GYMNOSPERMS**(12 hrs)**


1. **Gymnosperms:** General characters and classification (upto classes).
2. Morphology, Anatomy, reproduction and life history of *Pinus*, *Gnetum*

UNIT –IV: Tissues And Tissue systems**(12 hrs)**

1. **Tissues** – meristematic and permanent tissues (simple and complex)
2. Shoot apical meristem and its histological organisation
3. Root apical meristem and its histological organization

UNIT – V. Secondary growth**(12 hrs)**

1. Anomalous secondary growth in *Dracaena*, *Boerhavia* and *Bignonia*
2. Wood structure – general account. Study of local timbers Teak, Rosewood, Red sanders and *Terminalia tomentosa*


 (R. Saraswathy)
 BOS chairman
 Botany

I B.Sc BOTANY
PRACTICAL SYLLABUS: PAPER II-SEMESTER -II
Paper-IIP: Diversity of Archaeogniatae & plant Anatomy
Total hours of laboratory Exercises 45 hrs @ 3 per week

1. Morphology (vegetative and reproductive structures), anatomy of the following taxa :
a) *Marchantia*, b) *Funaria* c) *Lycopodium* d) *Pinuse* *Gnetum*


2. ANATOMY

1. Demonstration of double staining technique.
2. Tissue organization in root and shoot apices using permanent slides
3. Preparation of double staining slides
4. Anomalous secondary structure: Examples as given in theory syllabus.
5. Microscopic study of wood in T.S., T.L.S. and R.L.S.
6. Field visits

I (B.Sc.,BOTANY
PRACTICAL SYLLABUS: PAPER I-SEMESTER -II
IIP: Diversity of Archaeogniatae & plant Anatomy

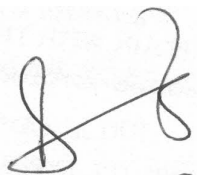
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|---|---------------|
| 1. Section cutting of A material | 9 Marks |
| (Slide 3 marks, diagrams-3 marks, Identification-3 marks) | |
| 2. Section cutting of B material | 9 Marks |
| (Slide 3 marks, diagrams-3 marks, Identification-3 marks) | |
| 3. Section cutting of C material | 10 Marks |
| (Slide 4 marks, diagrams-3 marks, Identification-3 marks) | |
| 4. Identification of spotters D,E,and F | 3x4 =12 marks |
| 5. Record (submission compulsory) | 10 |
| marks | |

Total : 50 Marks


(R. Saraswathy)
BOS chairman
Botany

Key:

- A. Bryophyta/Pteridophyta material
 - B. Gymnosperm material.
 - C. Anatomy material
 - D. Whole specimen or permanent slide of Bryophyta/ Pteridophyta
 - E. Whole specimen or permanent slide of Gymnosperm
 - F. Whole specimen or permanent slide of wood
-


(R. Saraswatny)
BOS chairman
Botany

I B.Sc., Botany
Paper - II, Semester - II
Theory Model Question Paper
Paper - II T-Diversity of Archaeogoniatae and Plant Anatomy
ఆర్కిగోనియా సహిత మొక్కలలో వైవిధ్యము మరియు మొక్కల అంతర్నిర్మాణ శాస్త్రము

Time : 3 hrs

Max. Marks: 75

SECTION - A

సెక్షన్ - ఎ

(Short Answer type questions)

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

5X5=25M

ఏదైనా **ఐదు** ప్రశ్నలకు సమాధానములు వ్రాయుము.

Draw neat and labelled diagram where ever necessary.

అవసరమైన చోట పటములు గీసి భాగములను గుర్తించుము.

1. Funaria protonema - ఫ్యునేరియా ప్రోటోనీమా
2. Lycopodium cone - లైకోపోడియం శంఖువు
3. Female gametophyte in Marsilea - మార్సీలియా స్త్రీ సంయోగ బీజదం
4. Morphology of pinus - పైనస్ బాహ్య స్వరూపం
5. Male cone of Gnetum - నీటమ్ పురుష శంఖువు
6. Parenchyma - మృదుకణజాలం
7. Tunica corpus theory - ట్యూనికా కార్పస్ సిద్ధాంతం
8. Dracaena Stem - డ్రాసీనా కాండము

SECTION - B

సెక్షన్ - బి

(Essay type questions)

Answer **ALL** questions.

5X10=50M

ఈ క్రింది వానిలో అన్ని ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. a) Write an essay on general characters of Bryophyta.
బ్రయోఫైటా సాధారణ లక్షణాలను గూర్చి వ్యాసము వ్రాయుము.
(or)
b) Give an account on sexual reproduction in marchantiat.
మార్కాంషియలో లైంగిక ప్రత్యుత్పత్తి గూర్చి వివరించుము.
10. a) Describe the external and internal features of Lycopodium.
లైకోపోడియం బాహ్య స్వరూపము మరియు అంతర్నిర్మాణమును గూర్చి వివరించండి.
(or)
b) Write an essay on heterospory and seed habit.
భిన్న సిద్ధబీజత మరియు విత్తన ధారణ గూర్చి వ్యాసము వ్రాయుము.

11. a) Describe the internal structure of pinus needle and add a note on its xerophytic characters.
పైనస్ నీడిల్ అంతర్నిర్మాణమును వర్ణింపుము. మరియు దాని యొక్క ఏడారి మొక్కల లక్షణాలు తెలుపుము.

(or)

- b) Explain the embryogeny in Gnetum

నీటమ్ యొక్క పిండజననాన్ని గూర్చి వివరించండి.

12. a) Write an essay on complex tissues.

సంక్లిష్ట కణజాలము గూర్చి వ్యాసము వ్రాయుము.

(or)

- b) Discuss about various theories regarding the organisation of root apex.

వేరు 6గ్ర నిర్మాణమును వివరించే వివిధ సిద్ధాంతాలను వివరించండి.

13. a) Describe anomalous secondary growth in Bignonia stem?

బిగ్నోనియ కాండంలో జరిగే అసంగత ద్వితీయ వృద్ధిని గూర్చి వివరించండి.

(or)

- b) Describe the wood structure and uses of Teak wood, Rose wood, Red sanders and Terminalia tomentosa.

టీకు, రోజ్‌వుడ్, ఎర్రచందనం, మరియు టెర్మినేలియా టొమెంటోసల యొక్క కలప లక్షణాలు మరియు ఉపయోగాలు గురించి వ్రాయుము.

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B. A. HISTORY

II Year B. A. Programme (UG) Courses – Under CBCS

SEMESTER – III – W.E.F. 2016-17

Paper – III (Core Paper)

LATE MEDIEVAL & COLONIAL HISTORY OF INDIA (1526 to 1857 A. D.)*(History and Culture of India (1526 – 1857))*

Unit - I	India from 1526 to 1707 A. D.: Emergence of Mughal Empire - Sources, Conditions in India on the eve of Babur's invasion, Brief Summary of Mughal Polity – Sher Shah & Sur Interregnum – Expansion & Consolidation of Mughal Empire – Rise of Marathas & Peshwas.
Unit - II	Administration, Economy, Society and Cultural Developments under the Mughals – Disintegration of Mughal Empire.
Unit - III	India under Colonial Hegemony : Beginning of European Settlements – Anglo-French Struggle – Policies of Expansion - Subsidiary Alliance & Doctrine of Lapse - Consolidation of British Empire in India up to 1857 A. D.
Unit - IV	Economic Policies of the British (1757-1857): Land Revenue Settlements – Commercialization of Agriculture – Impact of Industrial Revolution on Indian Industry ; Administration of the Company – Regulating Charter Acts; Cultural & Social Policies: Humanitarian Measures & Spread of Modern Education
Unit - V	Anti-Colonial Upsurge – Peasant & Tribal Revolts - 1857 Revolt – Causes, Nature & Consequences.

References:

1	Bipan Chandra, Modern India
2	Bipan Chandra, Rise and Growth of Economic Nationalism in India
3	C.A. Bayly, Indian Society and the Making of the British Empire
4	Harbans Mukhia, The Mughals of India
5	Irfan Habib, Medieval India: The study of a Civilization
6	L.P. Sharma, The Mughal Empire
7	R.P. Dutt, India Today
8	Sathis Chandra, Essays on Medieval Indian History
9	Tripathi R.P., The Rise & Fall of the Mughal Empire

Project Work: Students should be asked to identify structures belonging to Mughal period or colonial period and present status.

Make students to create a collage or collection of images related to a topic.

Images can be hand drawn, printed, or clipped from a magazine or newspaper.

B.A. HISTORY
II Year B.A. Programme (UG) Courses – Under CBCS
Semester –III

Paper – III (Core Paper)

LATER MEDIEVAL & COLONIAL HISTORY OF INDIA (1526 to 1857 A.D.)

(History and Culture of India (1526-1857))

Time : 3hrs

Max.marks : 75

PART – A

Answer any Five Questions choosing one question from each unit

(Marks 5X10 = 50)

1. Narrate the Administrative system of sher Shah.

(or)

Describe the Administration under Shivaji

2. Explain the economic and social conditions under Mughals.

(or)

Write the causes for the downfall of the Mughal Empire

3. Write a brief note on Carnatic wars.

(or)

Explain the merits and demerits of subsidiary Alliance.

4. Review the land revenue settlement under the British.

(or)

Write the impact of Industrial Revolution on Indian industry.

5. Explain the peasant and tribal revolts against the British.

(or)

Describe the causes and results of 1857 Sepoy Revolt

PART – B

Answer any five Questions

(Marks -5X5 = 25)

6. First battle of Panipat
7. Mansabdari System
8. Din-I-Ilahi
9. Architecture under Mughals
10. Balaji Baji Rao
11. Sahu
12. Nurjahan
13. Doctrine of Lapse

I. Venkatesh
Chairman
BOS - HISTORY

BOTANY

II B. Sc - SEMESTER –III – W.E.F.2016-17

(Paper-DSC IIA : Plant Taxonomy and Embryology)

Total hours of teaching 60hrs @ 4 hrs per week

UNIT – I: INTRODUCTION TO PLANT TAXONOMY (12hrs)

1. Fundamental components of taxonomy (identification, nomenclature, classification)
2. Taxonomic resources: Herbarium- functions & important herbaria, Botanical gardens, Flora, Keys- single access and multi-access.
3. Botanical Nomenclature- Principles and rules of ICBN (ranks and names; principle of priority, binomial system; type method, author citation, valid-publication).

UNIT – II: CLASSIFICATION (12 hrs)

1. Types of classification- Artificial, Natural and Phylogenetic.
2. Bentham & Hooker's system of classification- merits and demerits.
3. Engler & Prantle's system of classification- merits and demerits
4. Phylogeny – origin and evolution of Angiosperms

UNIT –III: SYSTEMATIC TAXONOMY-I (12hrs)

1. Systematic study and economic importance of the following families: Annonaceae, Brassicaceae, Rutaceae, Curcubitaceae, and Apiaceae.

UNIT –IV: SYSTEMATIC TAXONOMY-II (12hrs)

1. Systematic study and economic importance of plants belonging to the following families: Asteraceae, Asclepiadaceae, Lamiaceae, Ephorbiaceae, Arecaceae, and Poaceae.

UNIT – V: EMBRYOLOGY (12hrs)

1. Anther structure, microsporogenesis and development of male gametophyte.
2. Ovule structure and types; Megasporogenesis, development of Monosporic, Bisporic and Tetrasporic types (*Peperomia*, *Drusa*, *Adoxa*) of embryo sacs.
3. Pollination and Fertilization (out lines) Endosperm development and types.
4. Development of Dicot and Monocot embryos, Polyembryony.

Suggested activity: Collection of locally available plants of medicinal importance, observing pollen grains in honey, Aero palynology-collection of pollen from air using glycerin strips in different seasons.

Books for Reference:

1. Porter, C.L. (): Taxonomy of flowering Plants, Eurasia Publishing House, New Delhi.
2. Lawrence, G.H.M. (1953): Taxonomy of Vascular Plants, Oxford & IBH Publishers, New Delhi, Calcutta.
3. Jefferey, C.(1968) : An Introduction to Plant Taxonomy J.A. Churchill, London.
4. Mathur, R.C.(1970) : Systematic Botany (Angiosperms) Agra Book Stores- Lucknow, Ajmer, Allahabad, Delhi.
5. Maheswari,P(1963) :Recent Advances in the Embryology of Angiosperms(Ed.,) International Society of Plant Morphologists- University of Delhi.
6. Swamy. B.G.L. & Krishnamoorthy. K.V.(1980):From flower to fruit Tata McGraw Hill Publishing Co., Ltd., New Delhi.
1. Maheswari, P.(1985):An Introduction to the Embryology of Angiosperms Tata McGraw Hill Publishing Co.,Ltd., New Delhi.
8. Bhojwani, S.S. & Bhatnagar, S.P. (2000) : The Embryology of Angiosperms (4th Edition) Vikas Publishing House(P)Ltd., UBS Publisher's Distributors, New Delhi.

II B.Sc - SEMESTER-III
BOTANY PRACTICAL – DSC IIA
Plant Taxonomy and Embryology
Total hours of laboratory Exercises 30hrs @ 2 per week

Suggested Laboratory Exercises:

1. Systematic study of locally available plants belonging to the families prescribed in theory syllabus.
 2. Demonstration of herbarium techniques.
 3. Structure of pollen grains using whole mounts (*Catharanthus*, *Hibiscus*, *Acacia*, Grass).
 4. Demonstration of Pollen viability test using *in- vitro* germination (*Catharanthus*).
 5. Study of ovule types and developmental stages of embryo sac using permanent slides /Photographs.
 6. Structure of endosperm (nuclear and cellular); Developmental stages of dicot and monocot Embryos using permanent slides / Photographs
 7. Isolation and mounting of embryo (using *Symopsis* / *Senna* / *Crotalaria*)
 8. Field visits .
 9. Study of local flora and submission of Field Note Book.
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II B.Sc., BOTANY- SEMESTER -III
PRACTICAL MODEL PAPER III Plant Taxonomy and Embryology

1. Describe the given Plant specimens (A & B) in technical terms. Draw neat labeled diagrams of twig with inflorescence, L.S. of Flower, T.s. of Ovary and floral Diagram. Give floral formula. Identify the family.

2x 10 = 20 Marks

(Description- vegetative - 2 marks, floral – 4 marks; diagrams-3 marks, Identification-1 marks)

2. Derive the plant specimens C & D to their respective families- 2x4 = 08 marks

3. Identification of spotters -D, E ,and F (Embryology) 3x4 =12 marks

4. Record & Herbarium (submission compulsory) 10 marks

Total : 50 Marks

II B.Sc., Botany
Paper - III, Semester - III
Theory Model Question Paper
Paper - III, Plant Taxonomy and Embryology

Time : 3 hrs

Max. Marks:75

SECTION -A

సెక్షన్ - ఎ

(Short Answer type questions)

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

ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము

Draw neat and labelled diagrams where ever necessary.

అవసరమైన చోట పటములు గీసి భాగములను గుర్తించుము

1. Nomenclature - నామీకరణ 5X5=25M
2. Artificial systems of classification - కృతక వర్గీకరణ విధానాలు
3. Androecium of cucurbitaceae - కుకుర్బిటేసిలో కేసరావళి
4. Inflorescence in Asteraceae - ఆస్టరేసిలో పుష్పవిన్యాసం
5. Types of ovules - అండాలు రకాలు
6. Economic importace of Annonaceae - అనోనేసి ఆర్థిక ప్రాముఖ్యత
7. Lever mechanism in Lamiaceae - లామియేసిలో లీవర్ యాంత్రికం
8. Polyembryony - బహు పిండత

SECTION -B

సెక్షన్ - బి

(Essay type questions)

Answer **ALL** questions.

ఈ క్రిందివానిలో అన్ని ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. a) Write an essay on Herbarium and its functions 5X10=50M

హెర్బేరియం గూర్చి వ్యాసము వ్రాయుము మరియు ముఖ్య విధులను గూర్చి వివరించండి

(or)

- b) Discuss about the principles and rules of ICBN

ICBN సూత్రాలు మరియు నియమాలు గూర్చి వివరించుము

10 a) Give an account of Bentham and Hooker's system of classification

బెంథామ్ - హుకర్‌ల వర్గీకరణ విధానమును గూర్చి వ్రాయుము.

(or)

b) Give an account of Engler and Prantl system of classification

ఎంగ్లర్ మరియు ప్రాంటల్ వర్గీకరణ విధానమును గూర్చి వివరించండి.

11. a) Describe in detail the family Rutaceae and add a note on its Economic importance

రూటేసి కుటుంబమును వివరంగా వర్ణించుము మరియు ఆ కుటుంబ ఆర్థిక ప్రాముఖ్యతను తెలుపుము.

(or)

b) Describe the characters of the family Apiaceae and write its Economic importance

ఏపియేసి కుటుంబపు లక్షణాలను వివరించుము మరియు దాని ఆర్థిక ప్రాముఖ్యతను గూర్చి వ్రాయుము.

12 a) Describe the salient features of family Asclepiadaceae and add a note on its Economic importance

అస్క్లిపియడేసి కుటుంబ ముఖ్య లక్షణాలను గూర్చి వివరించుము మరియు ఆ కుటుంబ ఆర్థిక ప్రాముఖ్యతను గూర్చి వ్రాయుము.

(or)

b) Describe the characters of the family Poaceae and Mention its Economic importance.

పోయేసి కుటుంబ ముఖ్య లక్షణాలను వివరించుము మరియు ఆ కుటుంబ ఆర్థిక ప్రాముఖ్యతను గూర్చి వ్రాయుము.

13 a) Describe the development of Tetrasporic types of Embryosacs.

చతుస్సిద్ధబీజ రకాల పిండకోశాల అభివృద్ధిని గూర్చి వివరించండి.

(or)

b) Describe the types and Development of Endosperm

అంకురచ్ఛదము రకాలు మరియు అభివృద్ధిని గూర్చి వివరించండి.

K. Sujatha
B.O.S. Member
Botany

B.Sc. PHYSICS
(For Mathematics Combinations)
III SEMESTER – W.E.F.2016-17
OPTICS & LASER PHYSICS

Work load:60 hrs per semester

4 hrs/week

UNIT-I (8hrs)

1. Aberrations:

Introduction – monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses (i) in contact and (ii) separated by a distance.

UNIT-II (14hrs)

2. Interference

Principle of superposition – coherence-temporal coherence and spatial coherence-conditions for interference of light. Fresnel's bi-prism-determination of wavelength of light –change of phase on reflection. Oblique incidence of a plane wave on a thin film due to reflected and transmitted light (cosine law) –colors of thin films- Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire, Newton's rings in reflected light. Michelson interferometer, Determination of wavelength of monochromatic light using Newton's rings and Michelson Interferometer.

UNIT-III (14hrs)

3. Diffraction

Introduction, distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction –Diffraction due to single slit-Fraunhofer diffraction due to double slit-Fraunhofer diffraction pattern with N slits (diffraction grating).Resolving power of grating, Determination of wavelength of light in normal incidence and minimum deviation methods using diffraction grating, Fresnel's half period zones-area of the half period zones-zone plate-comparison of zone plate with convex lens-difference between interference and diffraction.

UNIT-IV(10 hrs)

4. Polarisation:

Polarized light: methods of polarization polarization by reflection, refraction, double refraction, scattering of light-Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, determination of specific rotation by Laurent's half shade polarimeter-Babinet's compensator - idea of elliptical and circular polarization

UNIT-V (14hrs)

5. Lasers and Holography

Lasers: introduction, spontaneous emission, stimulated emission. Population Inversion, Laser principle-Einstein coefficients-Types of lasers-He-Ne laser, Ruby laser- Applications of lasers. Holography: Basic principle of holography-Gabor hologram and its limitations, Applications of holography.

6. Fiber Optics

Introduction- different types of fibers, modes in an optical fiber, fiber material, principles of fiber communication (qualitative treatment only), advantages of fiber optic communication.

REFERENCE BOOKS:

1. BSc Physics, Vol.2, Telugu Akademy, Hyderabad
2. A Text Book of Optics-N Subramanyam, L Brijlal, S.Chand& Co.
3. Unified Physics Vol.II Optics & Thermodynamics – Jai Prakash Nath&Co.Ltd., Meerut
4. Optics, F..A. Jenkins and H.G. White, Mc Graw-Hill
5. Optics, Ajoy Ghatak, Tata Mc Graw-Hill.
6. Introduction of Lasers – Avadhanulu, S.Chand& Co.
7. Principles of Optics- B.K Mathur, Gopala Printing Press, 1995

Practical Paper III: Optics & Laser Physics

Work load:30hrs

2hrs/week

Minimum of 6 experiments to be done and recorded

1. Determination of refractive index of liquid-Boy's method.
2. Refractive index of a liquid-hallow prism
3. Dispersive power of a prism.
4. Determination of thickness of a thin wire by wedge method
5. Determination of radius of curvature of a given convex lens-Newton's rings.
6. Determination of wavelength of light using diffraction grating-minimum deviation method.
7. Determination of wavelength of light using diffraction grating-normal incidence method.
8. Resolving power of grating.
9. Resolving power of a telescope.
10. Study of optical rotation –Polarimeter.
11. Determination of wavelength of Laser light using diffraction grating

Suggested student activities

Student seminars, group discussions, assignments, field trips, study project and experimentation using virtual lab

Examples

Seminars :- A topic from any of the Units is given to the student and asked to give a brief seminar presentation.

Group discussion :- A topic from one of the units is given to a group of students and asked to discuss and debate on it.

Assignment :- Few problems may be given to the students from the different units and asked them to solve.

Field trip :- Visit to Satish Dhawan Space Centre, Sriharikota / Thermal and hydroelectric power stations / Science Centres, any other such visit etc.

Study project :- Web based study of different satellites and applications.

Domain skills:

Logical derivation, experimentation, problem solving, data collection and analysis, measurement skills

***** Documental evidence is to be maintained for the above activities.**

MODEL PAPER
THREE YEAR B.Sc DEGREE EXAMINATION
CHOICE BASED CREDIT SYSTEM
THIRD SEMESTER: PART II: PHYSICS

Paper III : Optics and Laser Physics
(With Mathematics Combination)

Time: 3 Hours

Max. Marks: 75

Section-A (Essay type)

Answer All questions

Marks :5X10 = 50

- 1.a) Explain Chromatic aberration . Explain the condition for removal of Chromatic aberration using two lenses separated by a distance.

OR

- b) What is meant by spherical aberration? Deduce the condition for minimum spherical aberration in a combination of two lenses separated by a distance.

2. a) Describe the experimental arrangement of biprism to find the wavelength of light.

OR

- b) Explain the formation of Newton's rings in reflected light. Explain the experimental determination of wave length of monochromatic light using Newton's rings.

- 3.a) Discuss the Fraunhofer diffraction pattern due to single slit. Obtain expression for intensity distribution , position of the Maxima and Minima.

OR

- b) Explain how do you determine the wavelength of light using a grating in the normal incidence position .

4. a) Describe the construction and working of a Nicol prism.

OR

- b) Define specific rotation. Describe how specific rotation of sugar solution is determined experimentally.

5. a) What is the principle of Laser. Explain the construction and working of ruby laser.

OR

- b) What is total internal reflection? Describe an optical fiber and explain how a light ray propagates in it. Write its uses.

Section-B (Short answer type)

Answer any three questions

Marks: 3X5 = 15

6. Explain the defect coma and how it is eliminated.
7. Explain the formation of colours in thin films.
8. Explain the construction and working of a zone plate.
9. What is double refraction explain.
10. What is Holography? Write its applications.

Section-C

Answer any two questions

Marks: 2X5 = 10

11. An achromatic lens of focal length 20 cm is to be made out of 2 thin crown and flint glass lenses in contact. If the dispersive power of crown and flint glasses are 0.2 and 0.4 respectively. Find the focal lengths of the lenses used.
12. In a Newton's rings experiment the diameter of the 16th ring was found to be 0.590 cm and that of 6th ring was 0.336cm if the wavelength of light used 5893 Å . Find the radius of the Plano convex lens used.
13. A plane diffraction grating in the second order shows an angle of diffraction 40° at the mercury blue line of wavelength 4360 Å . Calculate the number of lines per centimeter of the grating plate.
14. Determine the specific rotation of the given sample of sugar solution, if the plane of polarization is turned through 26°. The length of tube containing 20% of sugar solution is 20 cm.
15. An optical fiber has a core refractive index of 1.50 and a cladding refractive index of 1.45. Determine the critical angle at the core-cladding interface.

**SRI VENKATESWARA UNIVERSITY : : TIRUPATHI
ZOOLOGY SYLLABUS FOR III SEMESTER**

W.E.F. 2016-17

**ZOOLOGY –PAPER-III (THEORY)
CYTOLOGY, GENETICS AND EVOLUTION**

PERIODS- 60

MAX. MARKS -100

UNIT-I

1. Cytology-I

- 1.1. Definition , History, Prokaryotic and eukaryotic cells, virus ,viroids
Mycoplasma
- 1.2. Electron microscopic structure of eukaryotic cell.
- 1.3. Plasma Membrane-Different models of plasma membrane

UNIT- II

2.1 Cell Organelles

- 2.1. Structure and functions of Endoplasmic Reticulum
- 2.2 Structure and functions of Golgi apparatus
- 2.3 Structure and Functions of Lysosomes
- 2.4 Structure and functions of Ribosomes
- 2.5 Structure and functions of Mitochondria
- 2.6 Nucleus
- 2.7 Chromatin-Structure and Significance, Chromosomes-Structure, Types ,
Functions

UNIT-III

3.1 Genetics-I

- 3.1.1 Mendels work on transmission of traits
- 3.1.2 Principles of inheritance
- 3.1.3 Incomplete dominance and co-dominance
- 3.1.4 Lethal alleles, Epistasis, Pleiotropy

UNIT-IV

4.1 Genetics-II

- 4.1.1 Sex Determination
- 4.1.2 Sex Linked inheritance
- 4.1.3 Linkage and crossing over .
- 4.1.4 Extra chromosomal inheritance
- 4.1.5 Human Karyotyping

UNIT-V

5.1 Evolution

- 5.1.1 Origin of life
- 5.1.2 Lamarckism, Darwinism, Neo-Darwinism, Hardy-Weinberg Equilibrium
- 5.1.3 Variations, isolating mechanisms, natural selection
- 5.1.4 Types of natural selection(Directional, Stabilizing, disruptive)
- 5.1.5 Artificial Selections and forces of evolution
- 5.1.6 Speciation (Allopatric and Sympatric)
- 5.1.7 Macro evolutionary principles(Examples : Darwin's finches)

SUGGESTED READINGS

Lodish Berk, Zipursky, Matsudaira, Baltimore, Darnell 'Molecular cell Biology'
W.H Freeman and Company New York..

Gardner, E.J., Simmons, M.J Snustad, D.P(2008), Principle of Genetics. VIII
Edition Wiley India.

Snustad, D.P Simmons, M.J (2009) Principles of Genetics. V Edition. John.
Mohan. P Arora-History and Genetics, Himalaya Publishing House.

Klug, W.S Cummings, M.R Spencer C.A(2012). Concepts of Genetics. X
Edition Benjamin Cummings.

Russell, P J (2009) Genetics-A Molecular Approach. III Edition, Benjamin
Cummings.

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.

Ridley, M.(2004) Evolution. III Edition, Blackwell Publishing.

Douglas, J Futuyma(1997), Evolutionary Biology Sinauer Associates.

Minkoff, E(1983). Evolutionary Biology Addison –Wesley.

Neil A.Campbell, Jane. B Reece, Biology, 7th ed, Cummings

DeRobertis & De Robertis 'Cell and Molecular Biology' by Saunders College.

James D.Watson, Nancy H Hopkins' Molecular Biology of the Gene.

P Arora, 'Molecular Biology' Himalaya Publishing house Pvt. Ltd.

Edward Gasque' Manual of Laboratory Experiments in Cell Biology 'W.C Brouh
Publishers.

Mohan P.Arora, ' Biomolecules,' Himalaya Publishing House Pvt.Ltd.



25-5-2016

Dr. Md Azhar Baig
BOS Chairman

SRI VENKATESWARA UNIVERSITY : : TIRUPATHI
ZOOLOGY PRACTICAL EXAMINATION FOR III SEMESTER
ZOOLOGY –PAPER-III (PRACTICAL)
CYTOLOGY, GENETICS AND EVOLUTION

PERIODS- 24

MAX. MARKS -50

1. Cytology

- 1 Preparation of Temporary slides of Mitotic division with onion root tips.
- 2 Observation of Various Stages of Mitosis and meiosis (Prepared slides)
- 3 Mounting of Salivary gland Chromosomes of Chironomus larva .

2. Genetics

- 1 Study of Mendelian Inheritance using suitable examples
- 2 Study of linkage recombination, gene mapping using the data
- 3 Study of human karyotypes

3. Evolution

- 1 Study of fossil evidences
- 2 Study of homology and analogy from suitable specimens and pictures
- 3 Phylogeny of horse with pictures
- 4 Darwin's finches (Pictures)
5. Visit to natural history museum and submission of report

Certified Laboratory record should be submitted at the time of practical examination.



25-5-2016

Dr. Md Azhar Baig
BOS Chairman

SRI VENKATESWARA UNIVERSITY :: TIRUPATHI
ZOOLOGY MODEL QUESTION PAPER FOR III SEMESTER
ZOOLOGY –PAPER-III (THEORY)
CYTOLOGY, GENETICS AND EVOLUTION

TIME- 3 Hrs

MAX. MARKS -75

PART-A

- I. Answer any Five of the following** **5X5=25**
Each question carry 5 marks
Draw labeled diagrams wherever necessary

1. Mitochondrion
2. Ribosomes
3. Neo Darwinism
4. Natural selection
5. Incomplete Dominance
6. Crossing over
7. Mendel's Laws
8. Hardy Weinberg equilibrium

PART-B

- II. Answer any five questions .each question carry 10.marks** **5X10=50**
Draw labeled diagrams wherever necessary

9. Give account of Plasma membrane .

Or

Describe types, Structure and functions of Chromosomes.

10. Write an essay on Extra Chromosomal inheritance.

Or

Give an account of Sex linked inheritance

11. Explain the significance of human karyotyping .

Or

Give an account of Gene Interactions .

12. Write an essay on Sex Determination

Or

Write an essay on Mutations.

13. Give an account of isolating Mechanisms .

Or

Write an essay on Organic Variations.



25-5-2016

Dr. Md Azhar Baig
BOS Chairman

SRI VENKATESWARA UNIVERSITY : : TIRUPATHI
ZOOLOGY MODEL PRACTICAL EXAMINATION FOR III SEMESTER
ZOOLOGY –PAPER-III (Practical)
CYTOLOGY, GENETICS AND EVOLUTION

TIME- 2 Hrs

REVISED

MAX. MARKS -50

1. Squash Preparation of Onion root tip for Mitotic Chromosomes. 10M
Or
Mounting of salivary gland chromosomes of chironomous

2. Identify and Comment on the following spotters 5 X6= 30 M

- 1) Mitosis stage -1
- 2) Meiosis State- 1
- 3) Human Karyotype
- 4) Horse evolution clipping- 1
- 5) Homologous clipping -1
- 6) Hardy -Weinberg Equalibraium-1

3. Certified Record 10M

Examiners are instructed to set the question paper as per the practical syllabus.

Spotters :

Identification	-1 Mark
Diagram	-2 Mark
Comments	-2 Mark

Certified Practical Record is Compulsory. Student is not admitted to Practical's without Record Book.



25-5-2016

Dr. Md Azhar Baig
BOS Chairman

Paper IV: Thermodynamics & Radiation Physics
(For Non- Mathematics Combinations)

IV SEMESTER

Work load: 60hrs per semester

4 hrs/week

UNIT-I (12hrs)

1. Kinetic theory of Gases

Zeroth law of thermodynamics, Measurement of temperature- resistance thermometry, thermoelectric thermometers-kinetic theory of gases- assumptions-pressure of an ideal gas-molecular interpretation of temperature- Maxwell's law of distribution of molecular speeds (no derivation)-experimental verification.

UNIT-II (12hrs)

2. Thermodynamics

The first law of thermodynamics- work done in isothermal and adiabatic changes -Reversible and irreversible process-Carnot's cycle-Carnot's theorem - Second law of thermodynamics, Kelvin's and Clausius statements -Entropy, physical significance-Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of universe.

UNIT-III (12hrs)

3. Low temperature Physics

Introduction-Joule Kelvin effect- porous plug experiment. Joule's expansion-Distinction between adiabatic and Joule Thomson expansion-Liquefaction of helium Kapitza's method-Adiabatic demagnetization-Production of low temperatures-Principle of refrigeration. applications of substances at low-temperature.

UNIT-IV (12hrs)

4. Measurement, laws and theories of radiation

Black body-Ferry's black body-distribution of energy in the spectrum of Black body- Wein's laws and Rayleigh – Jean's – Law (no derivation) -Planck's radiation formula (no derivation)-Measurement of radiation-Types of pyrometers-Disappearing filament optical pyrometer-experimental determination-Angstrom Pyroheliometer-determination of solar constant, temperature of Sun.

UNIT-V (12hrs)

5. Thermoelectricity

Seebeck effect - variation of thermo-emf with temperature. Thermo electric series-Measurement of thermo emf, Law of intermediate metals and intermediate temperatures - Peltier effect, Demonstration Peltier coefficient. Thomson effect – demonstration, Thomson coefficient, Thermoelectric power. Application of Thermoelectric effects.

REFERENCE BOOKS

1. BSc Physics, Vol.2, Telugu Academy, Hyderabad
2. Physics for Biology and Premedical Students –D.N. Burns & SGG Mac Donald
3. Unified Physics Vol.II, Optics and Thermodynamics,Jai Prakash Nath&Co.Ltd., Meerut.
4. Heat and Thermodynamics, N.Subramanyam and L.Brijlal, S.Chand& Co.
5. Electricity and Magnetism, N.Subramanyam and L.Brijlal, S.Chand& Co.
6. University Physics, HD Young, MW Zemansky,FW Sears, Narosa Publishers, New Delhi

PRACTICAL PAPER IV: THERMODYNAMICS& RADIATION PHYSICS

Work load: 30 hrs

2 hrs/week

Minimum of 6 experiments to be done and recorded

1. Specific heat of a liquid –Joule’s calorimeter –Barton’s radiation correction
2. Thermal conductivity of good conductor-Searle’s method
3. Thermal conductivity of bad conductor-Lee’s method
4. Thermal conductivity of rubber.
5. Specific heat of a liquid by applying Newton’s law of cooling correction.
6. Heating efficiency of electrical kettle with varying voltages.
7. Thermo-emf - thermo couple potentiometer
8. Thermal behavior of an electric bulb (filament/torch light bulb)
9. Measurement of Stefan’s constant- emissive method
10. Study of variation of resistance with temperature - thermistor.

Suggested student activities

Student seminars, group discussions, assignments, field trips, study project and experimentation using virtual lab

Examples

Seminars :- A topic from any of the Units is given to the student and asked to give a brief seminar presentation.

Group discussion :- A topic from one of the units is given to a group of students and asked to discuss and debate on it.

Assignment :- Few problems may be given to the students from the different units and asked them to solve.

Field trip :- Visit to Satish Dhawan Space Centre, Sriharikota / Thermal and hydroelectric power stations / Science Centres, any other such visit etc.

Study project :- Web based study of different satellites and applications.

Domain skills:

Logical derivation, experimentation, problem solving, data collection and analysis, measurement skills

***** Documental evidence is to be maintained for the above activities.**

S.V.W. Three year B.Sc degree examinations.

CHOICE BASED CREDIT SYSTEM

FOURTH SEMESTER

PART II : PHYSICS (NM)

Paper IV : Thermodynamics and radiation physics.
(Non-mathematics combination)

New Syllabus W.E.F 2015-16

Model question paper.

Time : 3 Hours

Max. Marks : 75

SECTION - A

విభాగము - A

Answer all questions

5 × 10 = 50

అన్ని ప్రశ్నలకు సమాధానములు అయివుండాలి.

1 (a) State zeroth law of thermodynamics. Explain about thermoelectric thermometers.

ఉష్ణ గతిక శాస్త్రపు మూవీ నియమమును తెల్పుము. ఉష్ణ విద్యుత్ ఉష్ణ మাপకములను వివరించుము.

OR

(b) State Maxwell's law of distribution of molecular speeds. Describe an experiment with diagram to prove it.

మాక్స్ వెల్ల అణువుల వేగ వితరణ సూత్రమును తెల్పుము. ఈ సూత్రమును పరీక్షించు సహజములతో ప్రయోగ మూర్ఖ కమున వివరించుము.

2 (a) State first law of thermodynamics. State and prove Carnot's theorem.

ఉష్ణ గతిక శాస్త్రపు ప్రథమ నియమమును తెల్పుము. కార్నో సిద్ధాంతమును తెల్పు, నిరూపించుము.

OR

RBM
13/12/16

M

V. Balakrishna

(b) Define entropy. Give its physical significance. Explain about change in entropy in reversible and irreversible processes.

ఎంట్రోపీ నిర్వచించండి. దాని భౌతిక ప్రాధాన్యతను తెల్పండి. ద్వితీయ మూలకం పరగత ప్రక్రియలలో ఎంట్రోపీ మార్పును వివరించండి.

3(a) what is Joule-Kelvin effect. Explain Joule-Kelvin effect using porous plug experiment, జౌల్-కెల్విన్ ప్రభావము ఏమిటి? పోరస్ ప్లగ్ ప్రయోగము ద్వారా జౌల్-కెల్విన్ ఫలితమును వివరించండి.

OR

(b) Explain adiabatic demagnetization. Explain the principle of refrigeration. స్థితిశీలక నిరసా స్పృశకరణమును వివరించండి, శీతలీకరణ నియమమును వివరించండి.

4(a) Explain the determination of solar constant and temperature of SUN. సూర్యశక్తిని కొలవడం మరియు సూర్యుడి ఉష్ణోగ్రతను కనుగొనడం వివరించండి.

OR

(b) what is Ferris's blackbody. Explain the distribution of energy in the spectrum of blackbody with an experiment. ఫెర్రీస్ బ్లాక్ బడీ ఏమిటి? కృష్ణ వస్తువు వికిరణ వర్ణపటములో శక్తి వితరణను ప్రయోగ పూర్వకముగా వివరించండి.

5(a) what is Seebeck effect. Explain the measurement of thermocouple using potentiometer. సీబెక్ ఫలితము ఏమిటి? పొటెన్షియోమీటరు సహాయంతో ఉష్ణ విద్యుత్ ఫలితాలను కొలవడం వివరించండి.

OR

Ram
13/12/16

V. Balambh

- (b) Explain thermoelectric thermometers and their uses.

ఉష్ణ విద్యుత్ ఉష్మమీమా లను, వాటి ఉపయోగములను వివరించండి.

SECTION - B

విభాగము - 28

Answer any three of the following $3 \times 5 = 15$
క్రింది వానిలో మూడు ప్రశ్నలకు సమాధానములు వ్రాయండి.

6. state the postulates of kinetic theory of gases.
వాాయువుల కణ చలన సిద్ధాంతము యొక్క ప్రతిపాదనలు తెల్పండి.
7. state and explain second law of thermodynamics.
ఉష్ణగతిక శాస్త్రం రెండవ నియమమును తెల్పి, వివరించండి.
8. Distinguish between adiabatic and Joule-Thomson expansions.
ఊర్ధ్వశక్తి మరియు జౌల్-థామ్సన్ విస్తరణల మధ్య తేడాలు తెల్పండి.
9. state and explain planck's radiation formula.
ప్లాంక్ వికిరణ సూత్రమును తెల్పి, వివరించండి.
10. What is peltier effect. Explain the peltier coefficient.
పెల్టియర్ ఫలితము ఏమిటి? పెల్టియర్ గుణకమును వివరించండి.

SECTION - C

విభాగము - 2

Answer any two of the following $2 \times 5 = 10$
క్రింది వానిలో రెండు ప్రశ్నలకు సమాధానములు వ్రాయండి.

11. The r.m.s. speed of hydrogen molecule is 1.84 km/sec. What will be the r.m.s. speed of oxygen molecule at the same temperature.

Babu
13/12/16

Ma

N. Balaram

హైడ్రజన్ గ్యాస్ యొక్క గ.మ.ఘ. వడి 1.84 km/sec , గ్యాస్ లోని ఉష్ణోగ్రత వద్ద ఆర్మింగ్స్ అయిన గ.మ.ఘ. వడి ఎంత?

- 12) calculate the workdone when a gram mole of a perfect gas expands isothermally at 27°C to double its original volume. ($R = 8.3 \text{ J K}^{-1} \text{ mole}^{-1}$)

27°C ఉష్ణోగ్రత వద్దనున్న ఒక మోల్ ఆదర్శ వాయువును సమ ఉష్ణోగ్రత ప్రక్రియ ద్వారా ఘనపరిమాణను రెట్టంపు అను నట్లు వ్యాకోతం చేస్తే జరిగిన పని ఎంత? ($R = 8.3 \text{ J K}^{-1} \text{ mole}^{-1}$)

- 13) calculate the change in temperature when CO_2 gas suffers Joule-Thomson expansion at 27°C . The pressure on the two sides of the porous wall are 50 atmosphere and one atmosphere respectively. (Given, $a = 0.363 \text{ nt-m}^4/\text{mole}^2$, $b = 42.7 \times 10^{-6} \text{ m}^3/\text{mole}$; $C_p = 8.75 \text{ cal/mole-K}$)

జోల్-థామ్సన్ విస్తరణకు CO_2 వాయువు ప్రయోగించినా, 50 ఆట్మోస్ఫియర్ మరియు 1 ఆట్మోస్ఫియర్. ఈ విస్తరణ అనంతరం CO_2 వాయువు ఉష్ణోగ్రతలో తేడా ఏకాదే. ($a = 0.363 \text{ nt-m}^4/\text{mole}^2$;

$$b = 42.7 \times 10^{-6} \text{ m}^3/\text{mole}; C_p = 8.75 \text{ cal/mole-K}$$

- 14) In an atomic explosion, the maximum temperature produced was of the order of 10^7 K . calculate the wavelength of maximum energy. (Wein's constant $= 0.292 \text{ cm-K}$)

ఒక పరమాణు బాంబు బ్రష్టం అయినప్పుడు వెలువడే గరిష్ట ఉష్ణోగ్రత 10^7 K . ఈ విస్తరణకు అనంతరం వెలువడే గరిష్ట శక్తి తరంగదైర్ఘ్యం ఎంత? (వీన్ స్థిరాంకం $= 0.292 \text{ cm-K}$)

- 15) The cold junction of a thermocouple is kept at 0°C . When the temperature of the hot junction is raised to 50°C , the thermoe.m.f. is 2 mV

13/12/16

V. Balambur

and when the temperature is raised to 100°C , the thermoe.m.f. is 3.5 mV . calculate, (a) neutral temperature (b) The inversion temperature.

ఒక ఉష్ణ గుర్తుమ యొక్క వల్లకి సంధిని 0°C వద్ద స్థిరముగా ఉంచి, వేడి సంధి ఉష్ణోగ్రతను 50°C కి పెంచినపుడు ఉష్ణ విద్యుత్ బలక విలువ వీలవ 2 mV , వేడి సంధి ఉష్ణోగ్రతను 100°C కు పెంచినపుడు ఉష్ణ విద్యుత్ బలక విలువ 3.5 mV కుంద,
(a) తటస్థ ఉష్ణోగ్రతను (b) వివాదు ఉష్ణోగ్రతను కను గానుము.

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Rhm
13/12/16

Md

V. Balaram

B. A. HISTORY
II Year B. A. Programme (UG) Courses – Under CBCS
SEMESTER – IV – W.E.F. 2016-17
Paper – IV (Core Paper)
SOCIAL REFORM MOVEMENT & FREEDOM STRUGGLE (1857 to 1947 A.D.)
(History and Culture of India (1857 – 1947))

Unit - 1	Social, Religious & Self-Respect Movements: Social & Cultural Awakening – Brahma Samaj, Arya Samaj, Theosophical Society, Ramakrishna Mission, Aligarh Movement – Emancipation of Women – Struggle Against Caste: Jyotiba Phule, Narayana Guru, Periyar, Dr. B. R. Ambedkar.
Unit - II	Growth of Nationalism in the 2 nd Half of 19 th Century – Impact of British Colonial Policies under Viceroys' Rule and the Genesis of Freedom Movement – Birth of Indian National Congress.
Unit - III	Freedom Struggle from 1885 to 1920: Moderate Phase — Partition of Bengal - Emergence of Militant Nationalism – Swadeshi & Boycott 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 – Sardar Vallabhai Patel.

References:

1	Anil Seal, Emergence of Indian Nationalism
2	Banerjee, Sekhar, From Plassey to Partition
3	Bayly, C A., Indian Society and Making of the British Empire
4	Brown, Judith: Gandhi's Rise to Power
5	Chandra, Bipan, et. al., India's Struggle for Independence
6	Chatterjee, Jaya, Bengal Divided: Hindu Communalism and Partition 1932-1947
7	Desai, A. R. : Social Background to Indian Nationalism
8	Dutt, R.P., India Today
9	Joshi, P.C., Rammohun and the Forces of Modernisation in India
10	Sarkar Sumit: Modern India 1885 to 1947
11	Stokes, Eric, Peasants and the Raj
12	R.C. Majumdar, The Struggle for Freedom, Bharatiya Vidhya Bhavan Series

Project Work: As part of Internal Assessment, Project Work may be given on regional or local history related to culture, economy, struggles, land relations, cultural institutions and their influence on the society.

They can also be asked to create a play centered on any event in social reform movement or freedom struggle.

B.A. HISTORY
II Year B.A. Programme (UG) Courses – Under CBCS
Semester –IV
Paper – IV (Core Paper)
SOCIAL REFORM MOVEMENT & FREEDOM STRUGGLE (1858 to 1947 A.D.)
(History and Culture of India (1858-1947))

Time : 3hrs

Max.marks : 75

PART – A

Answer any Five Questions choosing one question from each unit

(Marks 5X10 = 50)

1. Explain the role of Brahmo samaj in the Socio Religious Movement in India

(or)

Write a brief note on Self-respect movements in India

2. Estimate the Administrative measures of Lord Ripon.

(or)

Describe the causes that led to the rise of Nationalism in India.

3. Explain the role of moderates in the Indian National Movement

(or)

Write a note on Home Rule Movement during the Indian National Movement

4. Write a note on the role of Gandhiji in the Indian National Movement.

(or)

Elaborate the role of Subhas Chandra Bose during the Indian National Movement

5. Explain the events briefly that led to the Partition of India in 1947 A.D.

(or)

Describe the role of Patel in the Unification of Princely states into Indian Union.

PART – B

Answer any five Questions

(Marks -5X5 = 25)

6. Arya Samaj
7. Indian national Congress
8. Rowlat-Act
9. Partition of Bengal
10. Muslim league
11. Jyothiba Pule
12. Tilak
13. Dr. B.R.Ambedkar

K. K. Bhandari
Chairman
Bos - History

B. A. HISTORY
 III Year B. A. Programme (UG) Courses – Under CBCS
SEMESTER – V – W.E.F. 2017-18
 Paper – V (Core Paper)
AGE OF RATIONALISM AND HUMANISM
THE WORLD BETWEEN 15TH & 18TH CENTURIES
(History of Modern World (1453 – 1821 A.D))

Unit – I	A Brief introduction to the fall / decline of feudalism & Rise of capitalism - Geographical Discoveries: Causes – Compass & Maps – Portugal Leads and Western World Follows – Consequences;
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
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.
Unit - IV	Age of Revolutions: The American Revolution (1776) – Opening of New World – Causes – Course – Declaration of Independence, 1776 – Bill of Rights, 1791 – Significance.
Unit – V	Age of Revolutions: The French Revolution (1789) – Causes - Teachings of Philosophers - Course of the Revolution – Results.

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.

Project Work: Individual or group projects may be presented by the students regarding preparation of bibliography on various topics.

Students should also be asked to construct glossaries to help them study and review lessons while helping them to understand a large array of vocabulary words.

B. A. HISTORY

III Year B. A. Programme (UG) Courses – Under CBCS

SEMESTER – V - Paper – VI (Core Paper)– W.E.F. 2017-18**HISTORY & CULTURE OF ANDHRA DESA (from 12th to 19th Century A.D.)***(History and Culture of Andhra from Satavahanas to 1857 A.D)*

Unit – I	Andhra during 12 th & 13 th 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.
Unit – II	Andhra between 14 th & 16 th 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.
Unit - III	Andhra through 16 th & 17 th Centuries A.D.: Evolution of Composite Culture - The QutbShahis of Golkonda – Origin & Decline – Administration, Society & Economy – Literature & Architecture.
Unit - IV	The 18 th & 19 th 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.
Unit – V	The 18 th & 19 th 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

References:

1	BalenduSekharam, The Andhras 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	KhandavalliLakxmimiranjanam&BalenduSekharam, ఆంధ్రులచరిత్ర – సంస్కృతి
8	SuravaramPratap Reddy, ఆంధ్రులసాంఘికచరిత్ర
9	B.S.L.Hanumanta Rao, ఆంధ్రులచరిత్ర
10	I.K.Sarma, <i>Early Historic Andhra Pradesh, 500 B.C.-624 A.D.</i> , New Delhi, 2008
11	B. Rajendra Prasad, <i>Early Medieval Andhra Pradesh, A.D.624 -1000 A.D.</i> , New Delhi, 2009
12	C. Somasundara Rao, <i>Medieval Andhra Pradesh, A.D. 1000 -1324 A.D.</i> , New Delhi, 2011
13	R. Soma Reddy, <i>Late Medieval Andhra Pradesh, A.D. 1324-1724 A.D.</i> , New Delhi, 2014

Project Work: Students may be asked to identify families/ areas/ institutions/ personalities/ monuments related to freedom struggle and prepare dissertation under the guidance of a teacher so as to equip them with better understanding of society and historical processes. This exercise should also aim at exposing the spirit of research, analysis, criticism, innovation and invention among the students.

BA HISTORY
III Year BA Programma (UG) Courses - Under CBCS
Semester V
Paper V (Core Paper)
AGE OF RATIONALISM AND HUMANISM
THE WORLD BETWEEN 15th & 18th CENTURIES
(History of Modern World (1453-1821))

PART - A

Answer Any FIVE Questions.

5x5=25 M

Q.No.I. 1) గెలీలియో - Galileo

2) మాజిలన్ - Magelan

3) మానవతావాదము - Humanism

4) మాకియవెల్లి - Maceavelli

5) పాప పరిహారపత్రాలు - Indulgencies

6) పద్మాలుగవ లూయీ - Louix XIV

7) రూసో - Rousseau

8) టౌన్ షెడ్ పన్నులు - Taxes of Townsed

PART - B

Answer Any FIVE Questions choosing one questions from each unit.

5x10=50 M

2) భౌగోళిక పరిశోధనలకు దారితీసిన పరిస్థితులేవి?

What are the causes led for Geographical discoveries.

Or

భౌగోళిక పరిశోధనల ఫలితాలను చెప్పండి.

What are the results of Geographical discoveries.

3) సాంస్కృతిక పునరుజ్జీవనం ఇటలీలోనే ఎందుకు ఆవిర్భవించినది?

What are the reasons for cultural renaissance in Italy only.

Or

సాంస్కృతిక పునరుజ్జీవన కాలంలో వచ్చిన శిల్ప, చిత్ర కళను వ్రాయండి.

Write the development in Art and Architecture in the age of Cultural renaissance.

(PTO)

4) మత సంస్కరణోద్యమంలో మార్టిన్ లూథర్ పాత్రను తెల్పండి?

Write the role of Martin Louthier in religious renaissance?

Or

కాల్వినిజం ముఖ్య లక్షణాలు వివరించండి.

What are the features of Calvinism?

5) రష్యా పీటర్ ది గ్రేట్ గురించి వ్రాయుము.

Write about Peter the Great of Russia?

Or

ఐదవ ఛార్లెస్ యొక్క గొప్పతనము గురించి వివరించుము.

Write about the greatness of Charles V?

6) అమెరికా స్వాతంత్ర్య పోరాట ఫలితాలను వ్రాయుము.

Write the results of the American War of Independence?

Or

ఫ్రెంచి విప్లవ కారణాలను వివరించుము.

Discuss the reasons for the French revolution.

BA HISTORY
III Year BA Programma (UG) Courses - Under CBCS
Semester V
Paper VI (Core Paper)
HISTORY & CULTURE OF ANDHRA DESA (from 12th to 19th C:A.D.)
(History and Culture of Andhradesa from Satavahanas to 1857 AD)

PART - A

Answer Any FIVE Questions.

5x5=25 M

I. 1) రుద్రమదేవి - Rudramadevi

2) శ్రీకృష్ణదేవరాయలు - Srikrishna Devarayalu

3) అబుల్ హసన్ తానీషా - Abul Hassan Tanisha

4) నిజాం-ఉల్-ముల్క్ - Nizam-Ul-Mulk

5) దత్త మండలాలు - Ceded Districts

6) సర్ సి.పి.బ్రౌన్ (1798-1884) - C.P.Brown

7) సర్ ఆర్థర్ థామస్ కాటన్ (1803-1899) - Sir Arthur Thomas Cotton

8) థార్ కమీషన్, 1948 June 17th - Sir Thar Commission

PART - B

Answer Any FIVE Questions choosing one questions from each unit.

5x10=50 M

II. రెండవ ప్రతాపరుద్రుని విజయాలను సమీక్షించుము.

Discuss the achievements of the Kakatiya king Pratapa Rudra II.

Or

కాకతీయుల కాలమునాటి సాంఘిక, ఆర్థిక పరిస్థితులు వివరించుము.

Write the Socio-Economic conditions of the Kakatiya rulers.

III. విజయనగర రాజుల కాలమునాటి సాంస్కృతిక పరిస్థితులను వివరించుము.

Explain the cultural conditions of the Vijayanagara Kings.

Or

విజయనగర సామ్రాజ్య పతనానికి గల కారణాలను సమీక్షించుము.

Analyse the reasons for the downfall of the Vijayanagara rulers.

VI. గోల్కొండను ఏలిన కుతుబ్ షాహీ ప్రభువుల కాలంలోని ఆంధ్రదేశ పరిస్థితులను వివరించుము.

Discuss the conditions in Andhra under the Qutub Shahi dynasty of Golkonda.

Or

(PTO)

మద్రాసు రాష్ట్రమునకు సర్ థామస్ మన్రో చేసిన సేవలను సమీక్షించుము.

Explain the contribution of Sir Thomas Munro to the Madras State?

V. 1857 తిరుగుబాటు వలన ఆంధ్రలో జరిగిన పరిణామాలను వివరించుము.

The consequences that witnessed in Andhra on the eve of 1857 revolt?

Or

19, 20 శతాబ్దాలలో ఆంధ్రదేశములో సాగిన సాంఘిక సంస్కరణోద్యమములను వివరించుము.

Write Social Reform movements in Andhra in 19th, 20th centuries?

VI. ఆంధ్రలో సాగిన వందేమాతరం (1905-1911) ఉద్యమమును గూర్చి వ్రాయుము.

Explain the Vandemataram Movement (1905-1911) in Andhra.

Or

హైదరాబాదు సంస్థానము ఇండియన్ యూనియన్‌లో చేరిన తీరును వివరింపుము (మే 1947 - సెప్టెంబర్ 1948).

How did the Hyderabad State join Indian Union?

III B. Sc - SEMESTER- V: BOTANY SYLLABUS
THEORY PAPER – V

Paper-V: Cell Biology, Genetics and Plant Breeding

Total hours of teaching 60 hrs @ 3 hrs per week

UNIT – I Cell Biology:

(12hrs)

1. Cell, the unit of life- Cell theory, Prokaryotic and eukaryotic cells; Eukaryotic cell components.
2. Ultra structure and functions of cell wall and cell membranes.
3. Chromosomes: morphology, organization of DNA in a chromosome (nucleosome model), Euchromatin and heterochromatin.

UNIT – II Genetic Material:

(12hrs)

1. DNA as the genetic material: Griffith's and Avery's transformation experiment, Hershey – Chase bacteriophage experiment.
2. DNA structure (Watson & Crick model) and replication of DNA (semi-conservative)
3. Types of RNA (mRNA, tRNA, rRNA), their structure and function.

UNIT – III Mendelian Inheritance:

(12 hrs)

1. Mendel's laws of Inheritance (Mono- and Di- hybrid crosses); backcross and test cross.
2. Chromosome theory of Inheritance.
3. Linkage: concept, complete and incomplete linkage, coupling and repulsion; linkage maps based on two and three factor crosses.
4. Crossing Over: concept & significance.

UNIT – IV Plant Breeding:

(12 hrs)

1. Introduction and Objectives of plant breeding.
2. Methods of crop improvement: Procedure, advantages and limitations of Introduction, Selection, and Hybridization (outlines only).

UNIT – V Breeding, Crop Improvement and Biotechnology:

(12 hrs)

1. Role of mutations in crop improvement.
2. Role of somaclonal variations in crop improvement.
3. Molecular breeding – use of DNA markers in plant breeding and crop improvement (RAPD, RFLP).

Suggested activity: Seminar, Debate, Quiz, observation of live cells and nucleus in Onion peels, observation of Meiotic nuclei in Maize pollen. Solving Genetics problems.

Books for Reference:

1. Old, R.W. and Primrose S.B. 1994, Principles of Gene Manipulation Blackwell Science, London
2. Grierson, D. and Convey S.N. 1989, Plant Molecular Biology, Blackie Publishers, New York.
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 and Company .
5. Sinnott, E.W., L.C. Dunn & J. Dobshansky (1958) : Principles of Genetics (5th Edition) McGraw Hill Publishing Co., N.Y. Toronto, London.
6. Winchester, A.M. (1958) : Genetics(3rd Edition) Oxford & IBH Publishing House, Calcutta, Bombay, New Delhi.
7. Singleton, R.(1963) : Elementary Genetics, D. Van Nostrand Co., Ltd., Inc., N.Y. & Affiliated East West Press (P) Ltd., New Delhi.
8. Strickberger, M.W. (1976): Genetics(2nd Edition) MacMillan Publishing Co., Inc., N.Y., London
9. Watson, J.D. (1977): Molecular Biology of the Gene, W.A. Benjamin, Inc., Menlo Park-California, Reading-Massachusetts, London, Amsterdam, Don Mills, Ontario, Sydney.
10. Gardner,E.J & Snusted, D.P.(1984): Principles of Genetics (7thedition) John Wiley & Sons, N.Y. Chichester, Brisbane, Toronto, Singapore.
11. Lewin, B. (1985) Genes VII Wiley Eastern Ltd., New Delhi, Bombay, Calcutta, Madras, Hydrabad.
12. Allard R.W(1999): The Principles of Plant Breeding, John & Wiley and Sons.
13. Poelman J.M: Breeding Field Crops, Springer.
14. George Acquaaah(2012):Principles of Plant Genetics & Breeding: Wiley-Blackwell.

III B. Sc - BOTANY SYLLABUS SEMESTER- V
Practical Paper-V: CELL BIOLOGY, GENETICS AND PLANT BREEDING
 Total hours of teaching 30hrs @ 2hrs per week

Suggested Laboratory Exercises:

1. Study of the structure of cell organelles through photomicrographs.
2. Study of structure 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. Study of effect of temperature & organic solvent on permeability of cell membrane.
6. Numerical problems solving Mendel's Laws of inheritance
7. Chromosome mapping using 3 point test cross data.
8. Hybridization techniques – emasculation, bagging (for demonstration only).
9. Field visit to a plant breeding research station.
10. Calorimetric estimation of DNA by diphenylamine method.

III B. Sc – SEMESTER- V, BOTANY PRACTICAL MODEL PAPER
PAPER-V: CELL BIOLOGY, GENETICS AND PLANT BREEDING

1. Perform the Experiment A .Perform squash on onion root tip, prepare the slide, identify at least one division stage. Write the procedure and draw the diagram of reported stage.

1 x 15 = 15marks

2. Give the experimental protocol of the experiments B

1 x 10 = 10 marks

3. Solving numerical problems on Mendelian inheritance C,D

2x7 1/2 =15 marks

4. Record & Viva

= 10 marks

50 marks

A-Onion root squash technique

B- Estimation of DNA by diphenylamine method

C&D Numerical problems on Mendelian Inheritance.

III B. Sc - SEMESTER- V: BOTANY THEORY SYLLABUS

PAPER-VI: PLANT ECOLOGY & PHYTOGEOGRAPHY

Total hours of teaching 60 hrs @ 3 hrs per week

UNIT – I. Elements of Ecology (12 hrs)

1. Ecology: definition, branches and significance of ecology.
2. Climatic Factors: Light, Temperature, precipitation.
3. Edaphic Factor: Origin, formation, composition and soil profile.
4. Biotic Factor: Interactions between plants and animals.

UNIT– II. Ecosystem Ecology (12 hrs)

1. Ecosystem: Concept and components, energy flow, Food chain, Food web, Ecological pyramids.
2. Productivity of ecosystem-Primary, Secondary and Net productivity.
3. Biogeochemical cycles- Carbon, Nitrogen and Phosphorous.

UNIT – II Population & Community Ecology (12 hrs)

1. Population -definition, characteristics and importance, outlines –ecotypes.
2. Plant communities- characters of a community, outlines – Frequency, density, cover, life forms, competition.
3. Interaction between plants growing in a community.

UNIT – IV Phytogeography (12 hrs)

1. Principles of Phytogeography, Distribution (wides, endemic, discontinuous species)
2. Phytogeographic regions of India.
3. Phytogeographic regions of World.
4. Endemism – types and causes

UNIT- V: Plant Biodiversity and its importance (12 hrs)

1. Definition, levels of biodiversity-genetic, species and ecosystem.
2. Biodiversity hotspots- Criteria, Biodiversity hotspots of India.
3. Loss of biodiversity – causes and conservation (*In-situ* and *ex-situ* methods).
4. Seed banks - conservation of genetic resources and their importance

Suggested activity : Collection of different soils, studying their texture, observing polluted water bodies, student study projects, debates on man's activity on ecosystem and biodiversity conservation methods, visiting a nearest natural vegetation area. Visit to NGO, working in the field of biodiversity and report writing; to study Honey Bees and plants yielding honey.

Books for Reference:

1. Daubenmire, R.F. (): Plants & Environment (2nd Edn.,) John Wiley & Sons., New York
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
5. Odum E.P. (1971): Fundamentals of Ecology (2nd Edn.,) Saunders & Co., Philadelphia & Natraj Publishers, Dehradun.
6. Odum E.P. (1975): Ecology By Holt, Rinert & Winston.
7. Oosting, H.G. (1978): Plants and Ecosystem Wadworth Belmont.
8. Kochhar, P.L. (1975): Plant Ecology. (9th Edn.,) New Delhi, Bombay, Calcutta-226pp.,
9. Kumar, H.D. (1992): Modern Concepts of Ecology (7th Edn.,) Vikas Publishing Co., New Delhi.
10. Kumar H.D. (2000): Biodiversity & Sustainable Conservation Oxford & IBH Publishing 10. Co Ltd. New Delhi.
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12. Chapman, J.L&M.J. Reiss (1992): ecology (Principles & Applications). Cambridge University Press, U.K.
13. Cain, S.A . (1944): Foundations of Plant Geography Harper & Brothers, N.Y.
14. Mani, M.S (1974): Ecology & Biogeography of India Dr. W. Junk Publishers, The Hague
15. Good, R. (1997): The Geography of flowering Plants (2nd Edn.) Longmans, Green & Co., Inc., London & Allied Science Publishers, New Delhi

III B. Sc - SEMESTER- V: BOTANY PRACTICAL
PRACTICAL PAPER-VI: PLANT ECOLOGY & PHYTOGEOGRAPHY

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 (4 each)
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.
6. Study of species diversity index of vegetation.
7. Estimation of Primary Productivity of an ecosystem
8. To study field vegetation with respect to stratification, canopy cover and composition.
9. Study of plants included in agro forestry and social forestry.
10. To locate the hotspots, phyto geographical regions and distribution of endemic plants in the map of India.
11. 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.

III B. Sc - SEMESTER- V: BOTANY PRACTICAL MODEL PAPER PAPER–VI: PLANT ECOLOGY & PHYTOGEOGRAPHY

1. Study Project under supervision	= 15 Marks
2. Record & Viva-Voce	= 10 Marks
3. Experiment A	= 10 Marks
4. Anatomical adaptations of B (Section cutting)	= 10 Marks
5. Spotters C&D (2x2 1/2)	= 5 Marks

Total = 50 Marks

1. Study Project of a surrounding Ecosystem (terrestrial or aquatic)(plant diversity, animal diversity, human activity, pollution levels, restoration efforts under supervision.
2. Presentation of the project work in Q & A session.
3. **A** -determination of soil porosity/PH/percolation/retaining capacity.
4. **B**- Xerophyte/Hydrophyte anatomical adaptations.
5. **C & D**-anemometer/rain gauze/lux meter.

BOTANY

Model Theory Question Paper

III B.Sc SEMESTER -V

Paper -V (Cell Biology, Genetics and Plant Breeding)

Time : 3 Hrs

Max.Marks : 75 Marks

Section- A : సెక్షన్: ఏ

5x5=25 Marks

Answer any five of the following:

Draw neat and labeled diagrams wherever necessary.

ఏ ఐదో ఏదు ఉత్తరములు జాబాబులు వ్రాయండి.

1. Enumerate Eukaryotic cell Components.

నిఖతంత్రక కణము యొక్క కణాంకాలను గుర్తించండి.

2. Write Short notes on types of Chromosomes.

వివిధ రకాల క్రోమోజోమ్లను గుర్తించి వాటిని వర్గీకరించండి.

3. Write about the structure and function of m-R.N.A.

మ-ఆర్.ఎన్.ఎ. నిర్మాణము, విధులను గుర్తించండి.

4. Discuss about the Griffith and Avery Experiment.

గ్రీఫిత్ మరియు ఆవేరి ప్రయోగమును గుర్తించండి.

5. Test cross : పరీక్షా సంకరణము

6. Complete Linkage : సంపూర్ణ సహ లక్షణము

7. Plant Hybridization : మేలికా ప్రభుత్వము

8. Molecular Plant Breeding : అణు ప్రభుత్వము

K. Sujatha
Dr. K. Sujatha
BOS chairperson

1. G. Govindarajulu
(D. Govindarajulu)
BOS member

2. B. Lakshmi
Dr. B. Lakshmi
B.O.S. member

Section-B

5x10=50 Marks

Answer all Questions:

Draw neat and labeled diagrams wherever necessary.

అన్ని ప్రశ్నలను సమాధానములు అయివుండాలి.
అవసరమైనచోట పటములు గీయవలసింది.

9.(a) Write an essay on structure and function of Plasma membrane.

ప్లాస్మా కేరమా, నిర్మాణము లిధులను గూర్చి అయింది.

(or)

(b) Describe the Ultra structure of Chromosomes.

క్రోమోజోముల సూక్ష్మ నిర్మాణమును వర్ణించండి.

10.(a) Describe Hershey- Chase Bacteria Phage Experiment.

హెర్షీ- చౌజ్ బాక్టీరియా ఫేజ్ ప్రయోగమును వర్ణించండి.

(or)

(b) Write an essay on DNA replication.

D. N. A. ప్రతికృతిని గూర్చి అయింది.

11.(a) Discuss about Chromosomal theory of Inheritance.

క్రోమోజోముల అనువంశికత సిద్ధాంతమును గూర్చి చర్చించండి.

(or)

(b) Write about Crossing over Concept and its Significance.

పాడగతి సిద్ధాంత భావన మరియు ప్రాముఖ్యతను వివరించండి.

1. 


(D. GOVINDARATU)

BOS member

2. 

DR. B. LAKSHMI

B.O.S. member


Dr. K. Sujatha
BOS chairperson

12.(a) Write an essay on objectives of Plant Breeding.

పక్షి ప్రజనన ముఖ్య లక్ష్యాలను గుర్తించి సమ ప్రయోజనం.

(or)

(b) Describe about advantages and limitations of Plant Selection.

మొక్కల ఎంపికలకు కొన్ని ప్రయోజనాలు మరియు పరిమితులు గుర్తించండి.

13.(a) Explain the role of Mutations in Crop-Improvement.

పంటల అభివృద్ధిలో ఉత్పత్తి వృద్ధిని మెరుగ్గా చేసే పాత్రను వివరించండి.

(or)

(b) Describe the uses of DNA markers in Plant Breeding.

పక్షి ప్రజననములో DNA మార్కర్ల పాత్రను వివరించండి.

K. Sujatha
Dr. K. Sujatha
BOS chairperson.

1. Dr. K. Sujatha

(Dr. K. Sujatha)

BOS member

2. Dr. B. Lakshmi

Dr. B. Lakshmi

BOS member

BOTANY

Model Theory Question Paper

III B.Sc SEMESTER -V

Paper -VI (Plant Ecology & Phyto Geography)

Time : 3 Hrs

Max.Marks : 75 Marks

Section- A

5x5=25 Marks

Answer any five of the following:

Draw neat and labeled diagrams wherever necessary.

: ఏదైనా ఇనుకొనకు సమాధానములు
అయివు.
అవసరమైనప్పుడు పటములు గీయండి

1. Origin of soil : మృత్తిక ఆవిర్భావము.
2. Food Chain : ఆహార శ్రేణి నామము.
3. Significance of Ecology : ఆరణ్యశాస్త్ర ప్రాముఖ్యత
4. Ecotype : ఎకోటైప్
5. Energy Flow : శక్తి ప్రవాహము
6. Plant Distribution : మొక్కల పంపిణీ.
7. In-Situ Conservation : స్థానిక నిలువ సురక్షితం
8. Net Productivity : నికర ఉత్పత్తి.

K. Sujatha
Dr. K. Sujatha
BOS Chairperson

1. Dr. K. Sujatha
(Dr. K. Sujatha)

BOS Member
2. Dr. K. Sujatha
Dr. K. Sujatha
BOS Member

Section-B

5x10=50 Marks

Answer all Questions:

Draw neat and labeled diagrams wherever necessary.

1. దేవుని ప్రశ్నలకు నే విశ్వాసము కలది ప్రాముఖ్యము
అవసరమైనచో చిత్రములు గీయవలెను

9. (a) Describe the role of Temperature and Light in Ecology.

ఆవరణ శాస్త్రములో ఉష్ణం, ప్రకాశము లాంటి వాటి పాత్రను వర్ణించండి.

(Or)

(b) Discuss about the interactions between Plants and Animals in Ecology.

ఆవరణ శాస్త్రములో మొక్కలు మరియు జంతువుల మధ్య సంబంధాలను వివరించండి.

10. (a) Explain the significance of Ecological Pyramids.

ఇది ఒక క్రమ పర్యవేక్షణ ప్రాముఖ్యతను వివరించండి.

(Or)

(b) Write an essay on Nitrogen Cycle.

నత్రజన చక్రము మరియు దాని ప్రాముఖ్యతను వ్రాయండి

11. (a) Describe the role of Plant Communities in Ecology.


ఆవరణ శాస్త్రములో వృక్ష సంఘాల పాత్రను సూక్ష్మ వర్ణించండి.


(Or)

(b) Write about the importance of Plant Population.

వృక్ష జనాభా యొక్క ప్రాముఖ్యతను వివరించండి

K. Sujatha
Dr. K. Sujatha
BOS chairperson

1. 
C.D. GOVINDARAJULU
BOS member

2. 
Dr. B. LAKSHMI
B.O.S. member

12. (a) Write an essay on Phyto geographic regions of India .

ಭಾರತ ಔಷಧಿಮಯ ಭೂ ಭೌಗೋಳಿಕ ಪ್ರದೇಶಗಳನ್ನು ಸೂಚಿಸಿ

(Or)

(b) What is Endemism? Describe types and causes of Endemism.

ಏಕೋದಕತೆ ಏನು? ಏಕೋದಕತೆ ರೀತಿಗಳು ಮತ್ತು ಕಾರಣಗಳನ್ನು
ವರ್ಣಿಸಿ.

13. (a) Describe the Bio- Diversity Hot-Spots of India.

ಭಾರತ ಔಷಧಿಮಯ ಭೂ ಭೌಗೋಳಿಕ ಪ್ರದೇಶಗಳನ್ನು ಸೂಚಿಸಿ

(Or)

(b) Write about the role of Seed Banks, Conservation of genetic resources and their importance.

ವಿತ್ತಿನ ಬೀಜಗಳನ್ನು ಸಂರಕ್ಷಿಸುವುದು, ಜನಪ್ರಿಯತೆ ಮತ್ತು ಅವುಗಳ
ಗುಣಗಳನ್ನು ಸೂಚಿಸಿ.

K. Sujatha
Dr. K. Sujatha
Bos chairperson.

1. Dr. Govind Lal

(D. GOVINDALATULU)

BOS member

2. Dr. B. Lakshmi

DR. B. LAKSHMI

B.O.S. member

B.A./B.Sc. THIRD YEAR MATHEMATICS SYLLABUS
SEMESTER – V, PAPER -5
RING THEORY & VECTOR CALCULUS

60 Hrs

UNIT – 1 (12 hrs) RINGS-I :-

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.

UNIT – 2 (12 hrs) RINGS-II :-

Ideals, Definition of Homomorphism – Homomorphic Image – Elementary Properties of Homomorphism – Kernel of a Homomorphism – Fundamental theorem of Homomorphism.

UNIT –3 (12 hrs) VECTOR DIFFERENTIATION :-

Vector Differentiation, Ordinary derivatives of vectors, Differentiability, Gradient, Divergence, Curl operators, Formulae Involving these operators.

UNIT – 4 (12 hrs) VECTOR INTEGRATION :-

Line Integral, Surface Integral, Volume integral with examples.

UNIT – 5 (12 hrs) VECTOR INTEGRATION APPLICATIONS :-

Theorems of Gauss and Stokes, Green's theorem in plane and applications of these theorems.

Prescribed Book :-

1. A text Book of B.Sc., Mathematics by B.V.S.S.Sarma and others, published by S. Chand & Company Pvt. Ltd., New Delhi.

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 Mathematics, Vol-III, Deepthi Publications.
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

B.A./B.Sc. THIRD YEAR MATHEMATICS SYLLABUS
SEMESTER – V, PAPER -6
LINEAR ALGEBRA

60 Hrs

UNIT – I (12 hrs) : Vector Spaces-I :

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 combination of Vectors, Linear span Linear independence and Linear dependence of Vectors.

UNIT –II (12 hrs) : Vector Spaces-II :

Basis of Vector space, Finite dimensional Vector spaces, basis extension, co-ordinates, Dimension of a Vector space, Dimension of a subspace.

UNIT –III (12 hrs) : Linear Transformations :

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 –IV (12 hrs) : Matrix :

Matrices, Elementary Properties of Matrices, Inverse Matrices, Rank of Matrix, Linear Equations, Characteristic Roots, Characteristic Values & Vectors of square Matrix, Cayley – Hamilton Theorem.

UNIT –V (12 hrs) : Inner product space :

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.

Prescribed Books :

1. A text Book of B.Sc., Mathematics by B.V.S.S.Sarma and others, published by S. Chand & Company Pvt. Ltd., New Delhi.

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”

S.V.UNIVERSITY MODEL PAPER
III B.Sc , V Semester Examinations
PART – II, MATHEMATICS Paper – V
(Ring Theory and Vector Calculus)

Time : 3 hrs


Max marks : 75

SECTION I

Answer any FIVE questions. Each question carries 5 marks.

5 X 5= 25

1. Define zero divisors in a ring and give an example.
2. Prove that every field is an integral domain.
3. If $f: R \rightarrow R'$ is a homomorphism of a ring R into the ring R' and, 0 and $0'$ are the zero elements in R and R' respectively then prove that $f(0)=0'$.
4. If f is a homomorphism ring R into a ring R' then prove that $\text{Ker } f$ is an ideal of R .
5. If $\vec{A} = 5t^2 \vec{i} + t\vec{j} - t^3\vec{k}$ and $\vec{B} = \sin t \vec{i} - \cos t \vec{j}$ then find $\frac{d}{dt} \vec{A} \times \vec{B}$
6. If $a = x+y+z$, $b = x^2+y^2+z^2$ and $c = xy + yz + zx$ prove that $[\text{grad } a, \text{grad } b, \text{grad } c] = 0$
7. Evaluate $\int_C \vec{F} \cdot d\vec{r}$ where $\vec{F} = xy \vec{i} + yz \vec{j} + zx \vec{k}$ and curve c is $\vec{r} = t \vec{i} + t^2 \vec{j} + t^3 \vec{k}$, t varying from -1 to 1 .
8. State Gauss divergence theorem .


K. Ch. V. Subbaiah Naidu
BOS Chairman
8331895531

SECTION II

Answer any FIVE questions. Each question carries 10 marks.

5 X 10 = 50

9a. Prove that every finite integral domain is field.

OR

b. Prove that characteristic of a Boolean ring is 2.

10a. Prove that intersection of two ideals in a ring is an ideal.


OR

b. State and prove Fundamental theorem of homomorphism on rings.

11a. If $\vec{r} = a \cos t \vec{i} + a \sin t \vec{j} + at \tan \theta \vec{k}$, find $\left| \frac{d}{dt} \vec{r} \times \frac{d^2}{dt^2} \vec{r} \right|$
and $\left[\frac{d}{dt} \vec{r} \cdot \frac{d^2}{dt^2} \vec{r} \cdot \frac{d^3}{dt^3} \vec{r} \right]$.

OR

b. 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 $Q = (5,0,4)$.


K. Ch. V. Subbalekh Naidu
Bos Chairman
8331895531

12a. If $\vec{F} = x^2y^2 \vec{i} + y\vec{j}$ then evaluate $\int_C \vec{F} \cdot d\vec{r}$ where C is the curve $y^2 = 4x$ in XY-plane from (0,0) to (4,4).

OR

b. If $\vec{F} = 2y \vec{i} - 3\vec{j} - x^2 \vec{k}$ and S is the surface $y^2 = 8x$ in the first octant bounded by the planes $y = 4$ and $z = 6$, evaluate $\int_S \vec{F} \cdot \vec{N} dS$.

13a. State and prove Stokes theorem.

OR

b. Verify Green's theorem in the plane for $\int_C (3x^2 - 8y^2) dx + (4y - 6xy) dy$ where C is the closed curve bounded by $y = \sqrt{x}$ and $y = x^2$.



K. Ch. V. Subbalaiah Naidu

BOS chairman

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S.V.UNIVERSITY MODEL PAPER
III B.Sc , V Semester Examinations
PART – II, MATHEMATICS Paper – VI
(Linear Algebra)

Time : 3 hrs


Max marks : 75

SECTION I

Answer any FIVE questions. Each question carries 5 marks.

5 X 5= 25

1. Let R be a field of real numbers and $W = \{(x,y,z) / x,y,z \in R\}$. Is W a sub-space of $V_3(R)$.
2. W_1 and W_2 are two sub spaces of finite dimensional vector space $V(F)$ then prove that $W_1 \cap W_2$ is a vector space .
3. Define basis and dimension of a vector space.
4. Prove that every non empty subset of a linearly independent set of vectors is a linearly independent.
5. Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 3 & 0 \\ 2 & 4 & 3 & 2 \\ 3 & 2 & 1 & 3 \\ 6 & 8 & 7 & 5 \end{bmatrix}$ by reducing into echelon form.
6. Define characteristic vector and characteristic value of a matrix.


K. Ch. V. Subbalak Naidu
BOS Chairman
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7. Define inner product space and give an example.

8. In the inner product space \mathbb{R}^3 find the $\|\alpha\|$ and unit vector of α where $\alpha = (1,2,3)$.

SECTION II

Answer any FIVE questions. Each question carries 10 marks.

5 X 10 = 50

9a. Prove the necessary and sufficient condition for the sub-set W of V to be a sub-space of V is $\forall a, b \in F, \alpha, \beta \in V \implies a\alpha + b\beta \in W$.

OR

b. Verify whether the vectors $(1,3,2), (1,-7,-8), (2,1,-1)$ of $V_3(\mathbb{R})$ are linearly independent or dependent.

10a. Prove that in a finite dimensional vector space any two bases will have same number of elements.

OR

b. Verify whether the set $S = \{(1,0,0), (1,1,0), (1,1,1)\}$ is a basis of $\mathbb{R}^3(\mathbb{R})$ or not.



K. Ch. V. Subbaram Naidu
BOS Chairman
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11a. State and prove Rank –Nullity theorem .

OR

b. Let $T: V_2 \rightarrow V_3$ be defined by $T(x,y) = (x+y, 2x-y, 7y)$. Find $[T: B_1, B_2]$ where B_1, B_2 are standard basis of V_2 and V_3 .

12a. Find the Eigen Values and Eigen vectors of the matrix $A = \begin{bmatrix} 3 & 1 & 1 \\ 2 & 4 & 2 \\ 1 & 1 & 3 \end{bmatrix}$


OR

b. State and prove Cayley- Hamilton theorem.

13a. State and prove Cauchy Schwarz inequality.

OR

b. In an inner product space , any orthogonal set of non zero vectors is linearly independent


K. Ch. V. Subbalakshmi Naidu
BOS Chairman
8331895531

Paper V: Electricity, Magnetism & Electronics

(For Maths Combinations)

V SEMESTER

Work load: 60 hrs per semester

4 hrs/week

UNIT-I (12 hrs)

1. Electric field intensity and potential:

Gauss's law statement and its proof- Electric field intensity due to (1) Uniformly charged sphere and (2) an infinite conducting sheet of charge. Electrical potential – equipotential surfaces- potential due to i) a point charge, ii) charged spherical shell and uniformly charged sphere.

2. Dielectrics:

Electric dipole moment and molecular polarizability- Electric displacement D , electric polarization P – relation between D , E and P - Dielectric constant and susceptibility. Boundary conditions at the dielectric surface.

UNIT-II (12 hrs)

3. Electric and magnetic fields

Biot-Savart's law, explanation and calculation of B due to long straight wire, a circular current loop and solenoid – Lorentz force – 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 - efficiency.

UNIT-III (12 hrs)

5. Alternating currents and electromagnetic 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 waves. Poynting theorem (statement and proof), production of electromagnetic waves (Hertz experiment).

UNIT-IV (12 hrs)

7. Basic electronics:

PN junction diode, Zener diode, Tunnel diode, I-V characteristics, PNP and NPN transistors, CB, CE and CC configurations – Relation between α , β and γ - transistor (CE) characteristics -Determination of hybrid parameters, Transistor as an amplifier.

UNIT-V: (12 hrs)

8. 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, exclusive-OR gate, Half adder and Full adder, Parallel adder circuits.

REFERENCE BOOKS

1. BSc Physics, Vol.3, Telugu Academy, Hyderabad.
2. Electricity and Magnetism, D.N. Vasudeva. S. Chand & Co.
3. Electricity, Magnetism with Electronics, K.K.Tewari, 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.

Practical Paper V:Electricity, Magnetism & Electronics

Work load: 30 hrs

2 hrs/week

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 and maximum power transfer theorem.
5. Field along the axis of a circular coil carrying current.
6. PN Junction Diode Characteristics
7. Zener Diode Characteristics
8. Transistor CE Characteristics- Determination of hybrid parameters
9. Logic Gates- OR,AND,NOT and NAND gates. Verification of Truth Tables.
10. Verification of De Morgan's Theorems.

Suggested student activities

Student seminars, group discussions, assignments, field trips, study project and experimentation using virtual lab

Examples

- | | |
|------------------|--|
| Seminars | - A topic from any of the Units is given to the student and asked to give a brief seminar presentation. |
| Group discussion | - A topic from one of the units is given to a group of students and asked to discuss and debate on it. |
| Assignment | - Few problems may be given to the students from the different units and asked them to solve. |
| Field trip | - Visit to Satish Dhawan Space Centre, Sriharikota / Thermal and hydroelectric power stations / Science Centres, any other such visit etc. |
| Study project | - Web based study of different satellites and applications. |

Domain skills:

Logical derivation, experimentation, problem solving, data collection and analysis, measurement skills

***** Documental evidence is to be maintained for the above activities.**

Paper VI: Modern Physics

(For Maths Combinations)

V SEMESTER

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 arrangement.

Raman effect, hypothesis, 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 – Phase and group velocities.

Heisenberg’s uncertainty principle for position and momentum (x and p), & energy and time (E and t). Experimental verification - Complementarity principle of Bohr.

UNIT-III (12 hrs)

3. Quantum (wave) mechanics

Basic postulates of quantum mechanics-Schrodinger time independent and time dependent wave equations-derivations. Physical interpretation of wave function. Eigen functions, Eigen values. Application of Schrodinger wave equation to particle in one dimensional infinite box.

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 moments. Liquid drop model and Shell model (qualitative aspects only) - Magic numbers.

5. Radioactivity decay:

Alpha decay: basics of α -decay processes. Theory of α -decay, Gamow’s theory, Geiger Nuttall law. β -decay, Energy kinematics for β -decay, positron emission, electron capture, 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. BSc 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. Murugesan and Kiruthiga Siva Prasath. S. Chand & Co.
4. Modern Physics by G. Aruldas & P. Rajagopal. Eastern Economy Edition.
5. Concepts of Modern Physics by Arthur Beiser. Tata McGraw-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. Dekker, McMillan India.

Practical Paper VI: Modern Physics

Work load: 30 hrs

2 hrs/week

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 α -rays.
5. Study of absorption of β -rays.
6. Determination of Range of β -particles.
7. Determination of M & H .
8. Analysis of powder X-ray diffraction pattern to determine properties of crystals.
9. Energy gap of a semiconductor using junction diode.
10. Energy gap of a semiconductor using thermister.

Note: For all the above 8 practical papers the book "B.Sc Practical Physics" by C.L. Arora Published by S.Chand & Co, New – Delhi may be followed.

NOTE: Problems should be solved at the end of every chapter of all units.

Suggested student activities

Student seminars, group discussions, assignments, field trips, study project and experimentation using virtual lab

Examples

- | | |
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| Seminars | - A topic from any of the Units is given to the student and asked to give a brief seminar presentation. |
| Group discussion | - A topic from one of the units is given to a group of students and asked to discuss and debate on it. |
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| Study project | - Web based study of different satellites and applications. |

Domain skills:

Logical derivation, experimentation, problem solving, data collection and analysis, measurement skills

***** Documental evidence is to be maintained for the above activities.**

Paper V : Electricity, Magnetism & Electronics

(For Non-Maths Combinations)

V SEMESTER

Work load: 60 hrs per semester

4 hrs/week

UNIT-1(15 hrs)

1. Electric field and potential

Coulomb's law – electric field and intensity of electric field –intensity of electric field due to i) a point charge–electric dipole and dipole moment. Electric lines of force, Electric flux. Gauss's law statement and its proof- applications of Gauss Law to (1) Uniformly charged sphere (2) an infinite conducting sheet of charge (No Derivation- qualitative ideas only). Electrical potential – equi-potential surfaces- potential due to i) a point charge, ii) charged spherical shell. Equi-potential surfaces with examples.

UNIT-II(10 hrs)

2. Capacitance and dielectrics

Derivation of expression for capacity due to i) a parallel plate capacitor with and without dielectric, ii) a spherical capacitor. Energy stored in a capacitor, electric capacitance. Electric dipole moment Di-electrics with examples, effect of electric field-electric displacement D, electric polarization P, permeability & susceptibility (Definitions only) – relation between D,E and P. Dipole moment of heart.

UNIT-III (10 hrs)

3. Current electricity

Current and current density, drift velocity expression, Kirchhoff's laws –statement and explanation and application to Wheatstone bridge, sensitivity of Wheatstone bridge, Carey-Foster's bridge- experimental measurement of temperature coefficient of resistance- strain gauge-piezoelectric transducers (applications only)

UNIT-IV (15 hrs)

5. Electromagnetism

Magnetic induction B, magnetic flux – Biot –Savart's law, magnetic induction due to (i) a long straight conductor carrying current (ii) on the axis of a circular coil carrying current (iii) solenoid, (No derivation-qualitative treatment only) Ampere's law – derivation of expression for the force on (i) charged particles and (ii) current carrying conductor in the magnetic field, Hall effect and its importance-electromagnetic pumping.

Faraday's law of electromagnetic induction, Lenz's law - Construction, theory and working of a Moving Coil Ballistic Galvanometer, application of B.G. damping correction, Self induction, Mutual induction and their units- Electromagnetic measurement of blood flow.

UNIT-V(12 hrs)

6. Basic Electronics

PN junction diode, Zener diode and its V-I characteristics, half and full wave rectifiers(semiconductor type) (working qualitative ideas only).Bridge type full wave rectifier.Action of filters- L and π type.PNP and NPN transistors and characteristics,Configurations Transistor configurations – CE transistor characteristics – h-parameters – Transistor as an amplifier.

Number system, conversion of binary to decimal and vice versa, De Morgans's theorems statements - logic gates – verification of truth tables, NAND and NOR gates as universal gates, Half and Full adders.

REFERENCE BOOKS

1. B.Sc., Physics, Vol.3, Telugu Academy, Hyderabad
2. Modern Physics by R. Murugesan and Kiruthiga Siva Prasath – S. Chand & Co.
3. Electricity and Magnetism, Brijlal and Subramanyam. RatanPrakashanMandir.
4. Physics for Biology & Premedical Students –DN Burns & SG MacDonald, Addison Wiley.
5. Principles of Electronics, V.K. Mehta, S.Chand & Co.,
6. Digital Principles and Applications, A.P. Malvino and D.P.Leach, Mc GrawHill Edition.

Practical Paper V: Electricity, Magnetism & Electronics

Work load: 30 hrs

2 hrs/week

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 and maximum power transfer theorem.
5. Field along the axis of a circular coil carrying current.
6. PN Junction Diode Characteristics
7. Zener Diode Characteristics
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| Study project | - Web based study of different satellites and applications. |

Domain skills:

Logical derivation, experimentation, problem solving, data collection and analysis, measurement skills

***** Documental evidence is to be maintained for the above activities.**

Paper VI: Modern Physics
(For Non-Maths Combinations)

V SEMESTER

Work load: 60 hrs per semester

4 hrs/week

UNIT-1(10 hrs)

1. Spectroscopy

Introduction - Zeeman effect - Experimental verification – Paschen Back effect – Stark effect – Explanations (elementary ideas only) - Raman effect, hypothesis, classical and quantum theory of Raman effect. Experimental arrangement for Raman effect and its application.

UNIT-II (12 hrs)

1. Fundamentals of quantum mechanics

Photoelectric effect – Explanation through demonstration, Einstein's Photoelectric equation – its verification by Millikan's experiment –theory of Compton effect (no derivation) and its experimental verification –Bohr's theory of Hydrogen atom – Derivation of expression for energy levels and spectral series of Hydrogen atom, atomic excitation, Frank Hertz experiment.

UNIT-III (10 hrs)

3. Matter Waves and uncertainty principle

Dual nature of radiation- de Broglie's theory of matter waves, expression for wavelength, properties of matter waves, Davisson and Germer experiment on electron diffraction – Discussion of results, Wave velocity and group velocity.

Heisenberg's uncertainty principle for position and momentum (x and p), energy and time (E and t). Experimental illustrations of uncertainty principle, Complementary principle of Bohr.

UNIT-IV: (12 hrs)

4. Radioactivity and radiation protection

The nature of radioactive emissions, the law of Radioactive decay, derivation, decay constant, Half life and mean life periods - derivations, units of radio activity, Carbon and Uranium dating (explanation) - Age of earth and rocks, Radioactive isotopes as tracers, radio cardiography. Principles of radiation protection– protective materials-radiation effects – somatic, genetic stochastic & deterministic effect, Natural radioactivity, Biological effects of radiation, Radiation monitors.

UNIT-V (16 hrs)

5. 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.

6. 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. Physics for Biology & Premedical Students –D.N. Burns & SG Mac Donald, Addison Wiley.
4. Modern Physics by R. Murugesan and Kiruthiga Siva Prasath. S. Chand & Co.
5. Basic Radiological Physics Dr. K. Thayalan - Jayapee Brothers Medical Publishing Pvt. Ltd. New Delhi (2003)
6. Physics of Radiation Therapy : F M Khan - Williams and Wilkins, Third edition (2003)
7. The Physics of Radiology-H E Johns and Cunningham.

Practical Paper VI: Modern Physics & Medical Physics

Work load: 30 hrs

2 hrs/week

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 α -rays.
5. Study of absorption of β -rays.
6. Determination of M & H .
7. Analysis of powder X-ray diffraction pattern to determine properties of crystals.
8. Energy gap of a semiconductor using junction diode.
9. Energy gap of a semiconductor using thermister.
10. Characteristics of LDR.

Suggested student activities

Student seminars, group discussions, assignments, field trips, study project and experimentation using virtual lab

Examples

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| Study project | - Web based study of different satellites and applications. |

Domain skills:

Logical derivation, experimentation, problem solving, data collection and analysis, measurement skills

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Note: For all the above 8 practical papers the book "B.Sc Practical Physics" by C.L.Arora
Published by S.Chand & Co, New – Delhi may be followed.

NOTE: Problems should be solved at the end of every chapter of all units.

MODEL PAPER

THREE YEAR B.Sc DEGREE EXAMINATION

CHOICE BASED CREDIT SYSTEM

FIFTH SEMESTER: PART II: PHYSICS

PAPER V: ELECTRICITY AND MAGNETISM

(FOR NON MATHEMATICS COMBINATIONS)

Time: 3 Hours

Max. Marks: 75

Section-A (Essay type)

Answer All questions

Marks :10x5 = 50

1. (a) Define Electric flux. State and prove Gauss law in electrostatics.

(OR)

- (b) Define the electrical potential and derive an expression for the potential due to a charged spherical shell.

2. (a) Derive an expression for the capacitance of a parallel plate capacitor with and without dielectric medium.

(OR)

- (b) Define electric displacement (D), electric field (E) and electric polarization (P) and derive the relation between D, E and P.

3. (a) Describe an experiment to measure the temperature coefficient of resistance of a material using Carey-Foster's Bridge.

(OR)

- (b) State and explain Hall effect and write its importance.

4. (a) Explain Biot-Savart's law and derive an expression for magnetic induction due to on the axis of a circular coil carrying current.

(OR)

- (b) Describe the construction and working of Ballistic Galvanometer with necessary theory and write it's uses.

5. (a) Explain half wave and full wave rectifiers using semiconductor diodes and draw input and output waveforms.

(OR)

- (b) Explain the construction and working of OR, AND and NOT logic gates and verify with truth tables.

W. V. Venkatesh
(Dr. W. V. Venkatesh Reddy)
H.O.D of physics
S.V.A.M. college, Tirupathi

Section-B (Short answer type)

Answer any three questions

Marks: 5 x 3 = 15

6. Explain equipotential surfaces with examples.
7. Derive an expression for energy stored in a capacitor.
8. State and explain Kirchoff's laws.
9. Write a short note on the electromagnetic measurement of blood flow.
10. State and prove de Morgans theorems.

Section-C

Answer any two questions

Marks: 5x2 = 10

11. Radius of the gold nucleus is $6.6 \times 10^{-15} \text{ m}$ and its atomic number is 79. Calculate the potential on the surface of the gold nucleus.
12. A parallel plate capacitor with area of plates 1 m^2 and distance between the plates 0.1 mm, has a dielectric constant 5 as the medium between the plates. If this capacitor is charged to 100 V, calculate the energy stored in it.
13. A galvanometer of resistance 50Ω has current maximum 1mA. How this galvanometer is converted into 0 to 10mA ammeter and 0 to 5 V voltmeter.
14. Calculate the self inductance of a solenoid of length 1m and area of cross section 0.01 m^2 with 200 turns.
15. Find the decimal equivalent of $(11001.011)_2$

N. Venkatesh
(DR. N. VENKATESH REDDY)
H. O. D of Physics
S.V. ARTS COLLEGE, TIRUPATI.

MODEL PAPER

THREE YEAR B.Sc DEGREE EXAMINATION
CHOICE BASED CREDIT SYSTEM
FIFTH SEMESTER: PART II: PHYSICS
PAPER VI : MODERN PHYSICS AND ELECTRONICS
(FOR NON MATHEMATICS COMBINATIONS)

Time: 3 Hours

Max. Marks: 75

Section-A (Essay type)

Answer All questions

Marks :10x5 = 50

1. (a) What is Zeeman effect ? Explain the experimental verification for Zeeman effect.

(OR)

- (b) What is Raman effect ? Explain the experimental arrangement for Raman effect .

2. (a) What is Compton effect ? Explain its experimental verification.

(OR)

- (b) Explain the Frank Hertz experiment and write its uses.

3. (a) Define de Broglie wave? Explain how Davisson and Germer predicated experimentally the electron waves predicated by de Broglie.

(OR)

- (b) Explain the Heisenberg's uncertainty principle. Describe the experimental illustrations of uncertainty principle using gamma ray microscope.

- 4.(a) Explain the law of Radioactive decay and derive expressions for decay constant, half life and mean life periods.,

(OR)

- (b) Explain Carbon and Uranium dating with examples.

5. (a) What is Bragg's law ? Explain Bragg's X-ray spectrometer to determine the wave length Of X- rays.

(OR)

- (b) Define the phenomenon of super conductivity, explain Meissner effect and write the uses of superconductors.

W. Venugopal Reddy

(Dr. W. VENUGOPAL REDDY)

H.O.D of PHYSICS

S.V. ARTS COLLEGE

TIRUPATI.

Section-B (Short answer type)**Answer any three questions****Marks: 5 x 3 = 15**

6. Write the applications of Raman effect.
7. Explain the Einstein's photoelectric effect equation.
8. Explain the complementary principle of Bohr.
9. Discuss the biological effects of nuclear radiation.
10. Write the properties of superconducting materials.

Section-C**Answer any two questions****Marks: 5x2 = 10**

11. The original line in an Raman experiment is 5460 \AA and the stokes line is at 5520 \AA . Find the wavelength of anti-stokes line.
12. A photon of wavelength 3310 \AA falls on a photo cathode and ejects an electron of maximum energy 3×10^{-9} joules. Calculate the work function of the cathode material. Given that $h = 6.62 \times 10^{-34} \text{ J-s}$, $c = 3 \times 10^8 \text{ m/sec}$.
13. An electron has a speed of 600 m/s with an accuracy of 0.005% . Calculate the certainty with which we can locate the position of the electron. Given that $h = 6.6 \times 10^{-34} \text{ joule-sec}$, $m = 9.1 \times 10^{-31} \text{ kg}$.
14. The half-life period of radium is 1590 years. In how many years will one gram of pure element be reduced to one centigram?
15. The spacing between the principle planes of NaCl crystal is 2.82 \AA . It is found that the first order Bragg reflection occurs at an angle of 10° . What is the wavelength of X-rays. Given that $\sin 10^\circ = 0.1736$.

W. Unde
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MODEL PAPER
THREE YEAR B.Sc DEGREE EXAMINATIONS, NOV/DEC 2017
CHOICE BASED CREDIT SYSTEM
FIFTH SEMESTER
PART II : PHYSICS
PAPER V: Electricity, Magnetism and Electronics
(For maths combination)
(Revised syllabus w.e.f 2017-18)

Time: 3 Hours

Max.Marks:75

SECTION – A (Essay type)

Answer ALL questions

(5 x 10 = 50)

అన్నీ ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. (a) Define electric potential. Derive an expression for the potential due to uniformly charged sphere.
విద్యుత్ శక్తమును నిర్వచించుము. ఏకరీతి ఆవేశ పూరిత గోళము వలన కలుగు విద్యుత్ శక్తమును సమీకరణమును రాబట్టుము.

OR

(b) Define electric field intensity (E), electric displacement (D), dielectric polarization (P); Obtain the relation between them.

విద్యుత్ క్షేత్ర తీవ్రత (E), విద్యుత్ స్థాన భ్రంశము (D) మరియు రోధక ద్రువణము (P) లను నిర్వచించి, వాటి మధ్య సంబంధమును ఉత్పాదించుము.

2. (a) State Biot – Savart's law. By using it calculate magnetic induction 'B' due to long straight wire.
బయోట్ – సావర్ట్ నియమమును తెల్పుము. ఈ నియమమునుపయోగించి పొడవైన తిన్నని తీగ వలన కలుగు అయస్కాంత ప్రేరణ B ను కనుగొనుము.

OR

(b) State Faraday's laws of electromagnetic induction. Derive an expression for the self inductance of a solenoid.

విద్యుత్ అయస్కాంత ప్రేరణ కు సంబంధించిన ఫారడే నియమములను తెల్పుము. సాలినాయిడ్ యొక్క స్వయం ప్రేరణ కు సమీకరణమును రాబట్టుము.

3. (a) Obtain the expression for the resonance of a parallel LCR circuit. Find its Q-Factor.
సమాంతర LCR వలయము యొక్క అనునాద సమీకరణమును రాబట్టుము. వలయము యొక్క Q - గుణకమును కనుగొనుము.

OR

(b) State and prove Poynting theorem

పాయింటింగ్ సిద్ధాంతమును నిర్వచించి, నిరూపించుము.

4. (a) What is a Zener diode? In what way it is different from PN junction diode? Explain Zener mechanism.
జీనర్ డయోడు అనగానేమి? జీనర్ డయోడు PN సంధి డయోడు కంటే ఏవిధముగ విభిన్నమైనది? జీనర్ ప్రక్రియను వివరించుము.

OR

(b) What are hybrid parameters of a transistor? How they are determined.

ట్రాన్సిస్టరు యొక్క హైబ్రిడ్ పరామితులు అనగానేమి? వాటిని ఎలా కనుగొంటారు.

5. (a) Explain binary addition and subtraction by 1's and 2's complement method.
ఒకట్ల మరియు రెండట్ల పూరక పద్ధతిని రెండు ద్వాంశ సంఖ్యల మొత్తము మరియు వాటి భేదాలను వివరించుము.

OR



(b) Discuss the working of half adder and full adder and give their truth tables.
అర్థ సంకలని మరియు పూర్ణ సంకలని లు పని చేయు విధానమును వివరించి, వాటి సత్య పట్టికలను వ్రాయండి.

SECTION - B

ANSWER ANY THREE QUESTIONS

(5 x 3 = 15)

ఏవైనా మూడు ప్రశ్నలకు సమాధానములు వ్రాయుము

6. State and prove Gauss law.
గాస్ నియమమును తెల్పి, నిరూపించుము.
7. State and explain Hall effect
హాల్ ఫలితమును తెల్పి, వివరించుము.
8. Write Maxwell's equations in differential form.
మాక్స్ వేల్ సమీకరణములను అవకలన రూపములో వ్రాయుము.
9. Explain the working of a transistor as an amplifier.
ట్రాన్సిస్టరు వర్ధకముగ పనిచేయు విధానమును వివరించుము.
10. State and prove De-Morgan's laws.
డీ మోర్గాన్ నియమములను తెల్పి నిరూపించుము.

SECTION - C

ANSWER ANY TWO QUESTIONS

(5 x 2 = 10)

ఏవైనా రెండు ప్రశ్నలకు సమాధానములు వ్రాయుము

11. Dielectric constant of a material is 5. Find its permittivity and susceptibility.
ఒక పదార్థము యొక్క రోధక స్థిరాంకము 5. ఆ పదార్థము యొక్క ప్రవేశ్య శీలత మరియు ససెప్టిబిలిటీ లను కనుగొనుము.
12. Calculate the energy stored in the magnetic field of a solenoid of inductance 5mH, when a maximum current of 3A flows through it.
5mH ప్రేరణ గల సాలినాయిడ్ గుండా గరిష్ట విద్యుత్ ప్రవాహము 3A అయిన ఆ సాలినాయిడ్ లో ఏర్పడిన అయస్కాంత క్షేత్రము లో నిల్వ ఉన్న శక్తి ఎంత?
13. A 60Hz a.c.circuit has an inductor of 10mH and 2Ω resistance. Calculate its power factor.
60Hz పౌనఃపున్యము గల వలయము ప్రేరణ మరియు 2 Ω నిరోధమును కలిగి ఉంది. ఆ a.c. వలయము యొక్క సామర్థ్య గుణకమును కనుగొనండి.
14. The d.c. current gain of a transistor in common - emitter configuration is 200. Find the d.c.current gain in CB configuration.
(CE)
ఉమ్మడి ఉద్గారి విన్యాసములో ఒక ట్రాన్సిస్టరు యొక్క d.c. కరెంటు వృద్ధి గుణకము 200 అయితే ఉమ్మడి ఆధారి విన్యాసంలో కరెంటు వృద్ధి గుణకమును కనుగొనండి.
15. Convert the decimal numbers 18 and 123 into binary numbers.
18 మరియు 123 దశాంశ సంఖ్యలను, ద్వి సంఖ్యామానములోనికి మార్చండి.

Reddy
14/06/17

THIRD YEAR PHYSICS EXAMINATIONS
Paper - VI **MODERN PHYSICS** (For maths combination)
V SEMESTER

TIME:: 3Hours

Max.Marks:: 75

Answer ALL questions from Part -A, Three from Part -B, Two from Part - C

Part -A లో అన్నిప్రశ్నలకు, Part -B లో మూడు ప్రశ్నలకు, Part - C లో రెండు ప్రశ్నలకు జవాబులు

వ్రాయుము

Part -A

5X10=50Marks

1.a) What is Zeeman effect? Describe its experimental arrangement.

జీమన్ ఫలితము అనగా ఏమి? దీని ప్రయోగ ఏర్పాటును వివరించుము

OR

b) Explain Raman Effect. Describe its experimental arrangement. Give its applications.

రామన్ ఫలితం అనగానేమి? రామన్ ఫలితం ప్రయోగ ఏర్పాట్లు వివరించుము. దాన్ని అనువర్తనాలు ఏమి?

2.a) Describe Davisson – Germer experiment with a neat sketch.

దక్కటి పటముతో డేవిస్సన్-గేర్మర్ ప్రయోగమును వివరించండి

OR

b) Explain Heisenberg Uncertainty Principle. Describe Gamma ray microscope

హైసన్ బర్గ్ అనిశ్చితత్వ నియమమును వివరింపుము. గామా కిరణ సూక్ష్మ దర్శిని విశదీకరించుము

3.a) Derive Schrodinger time independent and time dependent wave equations

ప్రొ. శ్రోడింగర్ కాలస్వతంత్ర మరియు కాలాధర తరంగ సమీకరణాలు ఉత్పాదించండి.

OR

b) Derive Schrodinger wave equation to particle in one dimensional box.

ఏకమితీయ పెట్టెలోని కణమునకు శ్రోడింగర్ సమీకరణమును ఉత్పాదించుము.

4.a) Describe the Liquid drop model of the nucleus

కేంద్ర ద్రవబిందు నమూన గురించి విపులముగా వివరించండి

OR

b) Explain Gamow's theory of Alpha decay

ఆల్ఫా క్షీణతకు గామో సిద్ధాంతం వివరింపుము.

5.a) Derive Bragg's law. Explain the Powder method to determine crystal structure.

బ్రాగ్ సూత్రము ఉత్పాదించండి. స్పటిక నిర్మాణం కనుగొనడానికి చూర్ణ పద్ధతిని వివరించండి.

OR

b) Explain Type I and Type II Super Conductors.

మొదటి మరియు రెండోవ రకము అతివాహకాలను వివరింపుము

Part -B

3X5=15 Marks

6. Explain L-S and J-J Coupling

L-S మరియు J-J సంధానములను వివరించుము

7. Write Properties of matter waves.

8. Explain postulates of quantum Mechanics


క్వాంటమ్ యాంత్రిక శాస్త్రము యొక్క ప్రతిపాదనలు వ్రాయుము

9. Explain Geiger Nuttal law

గైగర్ న్యూటల్ నియమమును వివరింపుము

10. Explain Meissner effect.

మెస్సనర్ ఫలితమును వివరింపుము.


14/6/17

Part-C

2X5=10 Marks

11. In a Raman experiment the sample is excited by 5460 \AA and the Stokes line is at 5560 \AA . Find the wavelength of the anti stokes line.

రామన్ ప్రయోగంలో పదార్థాన్ని 5460 \AA రేఖతో దీపనం చేశారు. స్టోక్స్ రేఖ తరంగ దైర్ఘ్యం 5560 \AA . విరుద్ధ స్టోక్స్ రేఖ తరంగ దైర్ఘ్యం కనుగొనండి.

12. Find the energy of the Neutron in eV whose deBroglie wavelength is 1 \AA . $h=6.6 \times 10^{-34} \text{ j-s}$

ఒక న్యూట్రాన్ తరంగదైర్ఘ్యం 1 \AA , $h=6.62 \times 10^{-34} \text{ j-s}$ అయితే దాని శక్తి కనుగొనండి.

13. An electron of mass $9 \times 10^{-31} \text{ Kg}$ is inside a box of length 10^{-8} cm . Find its minimum energy.

$9 \times 10^{-31} \text{ Kg}$ ద్రవ్యరాశి గల ఒక ఎలక్ట్రాన్ 10^{-8} cm పొడవు గల ఒక పేటికలో చలిస్తుంటే, దాని కనిష్ట శక్తి ఎంత.


14. Determine the binding energy of deuteron nucleus. Mass of deuteron nucleus is 2.013553 amu .

డ్యూటరాన్ బంధన శక్తికి లెక్కించుము. డ్యూటరాన్ కేంద్రక ద్రవ్యరాశి 2.013553 amu .

15. Calculate the critical current which can flow through a long thin superconductor wire of diameter 10^{-3} m . given $\mu_c = 7.9 \times 10^3 \text{ amp/m}$.

ఒక సన్నని అతి వాహక తీగ వ్యాసం 10^{-3} m , దానిలో ప్రవహించే సరిగ్గా విద్యుత్ ప్రవాహాన్ని లెక్కించండి.

$\mu_c = 7.9 \times 10^3 \text{ amp/m}$


14/6/19

ZOOLOGY SYLLABUS FOR V SEMESTER
ZOOLOGY - PAPER – V

3-5-131

ANIMAL BIOTECHNOLOGY

Periods:60

Max. Marks:100

Unit 1: Tools of Recombinant DNA technology - Enzymes and Vectors

Restriction modification systems: Types I, II and III. Mode of action, nomenclature, applications of Type II restriction enzymes in genetic engineering

DNA modifying enzymes and their applications: DNA polymerases. Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases

Cloning Vectors: Plasmid vectors:pBR and pUC series, Bacteriophage lambda and M13 based vectors, Cosmids, BACs, YACs,

Unit 2 Techniques of Recombinant DNA technology

Cloning: Use of linkers and adaptors

Gene delivery: Microinjection, electroporation, biolistic method (gene gun), liposome and viral-mediated delivery

PCR: Basics of PCR.

DNA Sequencing: Sanger's method of DNA sequencing- traditional and automated sequencing

Hybridization techniques: Southern, Northern and Western blotting,

Genomic and cDNA libraries: Preparation and uses

UNIT 3 Animal Cell Technology

Cell culture media: Natural and Synthetic

Cell cultures: primary culture, secondary culture, continuous cell lines; Protocols for Primary Cell Culture; Established Cell lines (common examples such as MRC, HeLa, CHO, BHK, Vero);

Hybridoma Technology: Cell fusion, Production of Monoclonal antibodies (mAb), Applications of mAb

Stem cells: Types of stem cells, applications

Unit 4 Reproductive Technologies & Transgenic Animals

Manipulation of reproduction in animals: Artificial Insemination, *In vitro* fertilization, super ovulation, Embryo transfer, Embryo cloning

Unit 5 Applied Biotechnology

Industry: Fermentation: Different types of Fermentation: Short notes on - Submerged & Solid state; batch, Fed batch & Continuous; Stirred tank, Air Lift, Fixed Bed and Fluidized; Downstream processing - Filtration, centrifugation, extraction, chromatography, spray drying and lyophilization

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ZOOLOGY PRACTICAL SYLLABUS FOR V SEMESTER
ZOOLOGY - PAPER - V
ANIMAL BIOTECHNOLOGY

Periods: 24

Max. Marks: 50

Any SIX of the following:

1. Maintenance and storage of *E. coli* DH5 alpha cells.
2. DNA quantification using agarose gel electrophoresis (by using lambda DNA as standard).
3. Preparation for insertion and vector for ligation.
4. Preparation of competent cells
5. Transformation of *E. coli* with plasmid DNA using CaCl₂,
6. Techniques: Western Blot, Southern Hybridization, DNA Fingerprinting
7. Amplification of DNA by PCR
8. Packing and sterilization of glass and plastic wares for cell culture.
9. Preparation of culture media.

SUGGESTED READING

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. Elsevier Academic Press, USA
3. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford, U.K.
4. Sambrook J and Russell D. (2001). Molecular Cloning-A Laboratory Manual. 3rd edition. Cold Spring Harbor Laboratory Press
5. Wiley JM, Sherwood LM and Woolverton CJ. (2008). Prescott, Harley and Klein's Microbiology. McGraw Hill Higher Education
6. Brown TA. (2007). Genomes-3. Garland Science Publishers
7. Primrose SB and Twyman RM. (2008). Genomics: Applications in human biology. Blackwell Publishing, Oxford, U.K.
8. Animal Cells Culture and Media, D.C. Darling and S.J. Morgan, 1994. BIOS Scientific Publishers Limited.
9. Methods in Cell Biology, Volume 57, Jennie P. Mathur and David Barnes, 1998. Animal Cell Culture Methods Academic Press.
10. P.K. Gupta: Biotechnology and Genomics, Rastogi publishers (2003).
11. B.D. Singh: Biotechnology, Kalyani publishers, 1998 (Reprint 2001)

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ZOOLOGY SYLLABUS FOR V SEMESTER

ZOOLOGY - PAPER - VI

3-5-132

ANIMAL HUSBANDRY

Periods:60

Max. Marks: 100

UNIT – I

:

10 Hours

General introduction to poultry farming. Principles of poultry housing. Poultry houses. Systems of poultry farming. Management of chicks, growers and layers. Management of Broilers.

UNIT – II:

10 Hours

Poultry feed management – Principles of feeding. Nutrient requirements for different stages of layers and broilers. Methods of feeding. Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management.

UNIT – III:

10 Hours

Selection, care and handling of hatching eggs. Egg testing. Methods of hatching. Brooding and rearing. Sexing of chicks.

UNIT- IV:

20 Hours

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. Cleaning and sanitation of dairy farm. Weaning of calf. Castration and dehorning. Deworming and Vaccination programme. Records to be maintained in a dairy farm.

UNIT - V:

10 Hours

Care and management of dairy animals - Care and management of calf, heifer, milk animal, dry and pregnant animal, bulls and bullocks.

ZOOLOGY PRACTICAL SYLLABUS FOR V SEMESTER

ZOOLOGY –PRACTICAL - VI

ANIMAL HUSBANDRY

Periods:24

Max. Marks: 50

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.

ZOOLOGY MODEL PAPER FOR V SEMESTER

ZOOLOGY PAPER-V

ANIMAL BIO-TECHNOLOGY

Time: 3 hrs

Max Marks:75

- I. Answer any **FIVE** of the following:
Draw labeled diagrams wherever necessary

5x5=25 marks

1. Restriction Enzymes
2. DNA Polymerase
3. PBR Vector
4. Microinjection Technique
5. PCR
6. Cryopreservation
7. In Vitro Fertilization
8. Chromatography

- II. Answer any **FIVE** of the following
Draw labeled diagrams wherever necessary

5x10=50 marks

9. Describe DNA modifying enzymes and their applications
OR

Describe cloning vectors with examples

10. Enumerate recombinant DNA technology
OR

Describe the techniques involved in gene delivery system.

11. Define animal cell technology and describe the various cell culture techniques
OR

Define Hybridoma Technology

12. Describe reproductive technologies in animals
OR

Define Embryo Transfer and Embryo cloning

13. Describe different types of fermentation mechanisms
OR

Enumerate the processes involved in Downstream processing

ZOOLOGY PRACTICAL SYLLABUS FOR V SEMESTER 2017-18

ANIMAL BIO-TECHNOLOGY

Time: 2 hrs

Max Marks:50

-
1. Major experiment: prepare the vector for ligataion 20 marks
 2. Minor Experiment: Prepare the competent cells 10 marks
 3. Identify the spotters describe e important characters with labeled diagram 2x5=10 marks
 - a. PCR
 - b. Clone- Dolly
 4. Certified Record 10 marks

50 marks

[Signature] (Chair person)
[Signature]

ZOOLOGY MODEL PAPER FOR V SEMESTER

ELECTIVE - ZOOLOGY PAPER-VI

ANIMAL HUSBANDRY

Time: 3 hrs

Max Marks:75

=====

- I. Answer any **FIVE** of the following: 5x5=25 marks
Draw labeled diagrams wherever necessary
1. Poultry farming
 2. Broilers
 3. Poultry feed management
 4. Methods of Hatching
 5. Cross breeding
 6. Cleaning and Sanitation of Dairy Farm
 7. Vaccination Programme
 8. Care and Management in Milk animal
- II. Answer any **FIVE** of the following 5x10=50 marks
Draw labeled diagrams wherever necessary
9. Describe the Principles of Poultry
OR
Describe different methods of management of Chiks, Growers and Layers
10. Describe nutrient requirements for Layers and Broilers
OR
Enumerate various Poultry diseases, symptoms, control and managements.
11. Describe the construction of Hatchery
OR
Describe the methods of Hatching in Hatchery.
12. Describe the classification of Indian Cattle
OR
Describe housing of Dairy animals
13. Describe Care taken in Dairy Animals
OR
Describe the various managements of Dairy animals

ZOOLOGY PRACTICAL SYLLABUS FOR V SEMESTER

ELECTIVE-ZOOLOGY PRACTICAL-VI

ANIMAL HUSBANDARY

Time: 2 hrs

Max Marks:50

=====

- | | |
|---|--------------|
| 1. Draw a neat labeled diagram of Digestive system peginon/ Fowl | 10 marks |
| 2. Poultry/Cattle 4 spotters
Photographs of any three Birds/Cattle | 4x5=20 marks |
| 3. Submission of a report regarding various activities in a poultary form | 10 marks |
| 4. Certified Record | 10 marks |

50 marks

SRI VENKATESWARA UNIVERSITY : TIRUPATI

B.Com (COMPUTER APPLICATIONS)

W.E.F. 2017-18

SEMESTER V

Sl. No.	Course	Name of the Subject	Total Marks	Mid. Sem. Exam	Sem. End Exam	Teaching Hours	Credits
1.	DSC 1 E	5.1 Cost Accounting	100	25	75	5	4
2.	DSC 2 E	5.2 Goods and Services Tax – Fundamentals	100	25	75	5	4
3.	DSC 3 E	5.3 Advanced Corporate Accounting	100	25	75	5	4
4.	Elective – DSC 1F/Inter-disp.	1. E-Commerce 5.4. e-Commerce Practical (5.4 =50marks)	100 50	25	75 50	4 2	4 2
5.	Elective – DSC 2F/Inter-disp.	5.5. Business Networks Practical (5.5 =50marks)	100 50	25 -	75 50	4 2	4 2
		5.6. Project Management	100	25	75	5	4
		2. Computer Applications 5.4. Data Base Management System Practical (5.4 =50marks) 5.5 Web Technology Practical (5.5 =50marks) 5.6. Project Management					
TOTAL			700	150	550	32	28

Note 1 : Practical Examination in each Paper of Elective 1 and 2 for 50 marks.

2. A candidate has to select **One Stream of Elective only.**

DSC - 1E 5.1 - COST ACCOUNTING

Unit-I: Introduction: Classification of Cost – Meaning of Cost, Costing, Cost Accounting and Cost Accountancy - Distinguish between Financial Accounting and Cost Accounting – Cost centre and cost unit - Preparation of Cost Sheet (including problems).

Unit-II: Elements of Cost: Materials: Material control - Methods of pricing issues – FIFO, LIFO, Weighted average, Simple average only (including problems)

Unit-III: Labour Cost : Labour: Control of labor costs - Methods of remuneration – labour incentives schemes – Time Rate Method, Piece Rate Method, Halsey Method, Rowan Method only (including problems).

Unit-IV: Contract Costing : Characteristic features of Contract costing – Preparation of Contract Accounts on incomplete contracts – Preparation of Contract account and Contractee Account (including problems)

Unit V : Costing Techniques – Marginal Costing)– BEP, P/V Ratio, Margin of Safety (including problems)

References:

1. T.S. Reddy and Y. Hariprasad Reddy- Cost Accounting, Margham Publications, Chennai
2. S.P. Jain and K.L. Narang – Advanced Cost Accounting, Kalyani Publishers, Ludhiana.
3. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
4. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
5. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
6. S.N .Maheswari – Principles of Management Accounting.
7. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.
8. Sharma & Shashi Gupta – Management Accounting, Kalyani Publishers. Ludhiana.

Sri Venkateswara University
Model Question Paper
III B.Com
Semester – V, November, 2017
DSC 1E 5.1 – Cost Accounting

Time: 3 Hours

Max. Marks: 75

Section A

Answer any **Five** of the following Questions

(5 x 3= 15 Marks)

1. (a) Classification of Cost
(b) Cost Centre
(c) Material Control
(d) LIFO
(e) Idle Time
(f) Labour Turnover
(g) Profit on incomplete contracts
(h) Work in Progress in contract accounts
(i) Marginal Cost
(j) Margin of Safety

Section - B

Answer any **ONE** Question from each unit.

(5 ×12 =60 Marks)

UNIT – I

2. During the year 2014, Raghava producers produced 50,000 units of a product. The following are the expenses:

	Rs.
Stock of raw materials on 1.1.2014	10,000
Stock of raw materials on 31.12.2014	20,000
Purchases	1,60,000
Direct wages	75,000
Factory expenses	25,000
Office expenses	37,500
Selling expenses	25,000
Selling Price for the sold 44,000 units	Rs.10

You are required to prepare a Cost sheet showing cost and profit per unit with total cost at each stage. |

3. Anjaneya manufacturers furnishes the following data relating to the manufacture of its product

During the month of April 2015:

Raw materials consumed	-	Rs. 55,000
Direct labour charges	-	Rs. 90,000
Machine hours worked	-	900
Machine hour rate	-	Rs. 25
Administrative overheads	-	20% on works cost
Selling overheads	-	Re. 12. per unit
Units produced	-	4260
Units sold	-	4,000 at Rs. 62 per unit

Find a) The cost per unit b) Profit for the period.

UNIT – II

4. From the following details prepare stores ledger using LIFO & Simple Average Method

Purchases : April 2015

2 nd	5000 units at Rs. 120
4 th	2500 units at Rs. 130
9 th	4000 units at Rs. 136
13 th	3600 units at Rs. 132

Issued for Production : April 2015

6 th	4000 units
10 th	1200 units
11 th	600 units
15 th	1000 units
18 th	2400 units & there is a shortage of 10 units Identified.

5. The Sri Rama Oil Company, a well known distributor of fuel oil closes its accounts at the end of each month.

The following information is available for the month of June, 2014:

	Rs.
Sales	4,00,000
Factory overheads	32,000
Administrative Expenses	35,000
Direct Labour	44,000
Inventory, June 1	
50 tons @ Rs.500 per ton	25,000
Purchases (including carriage inward):	
June, 10, 150 tons @ Rs.800 per ton	1,20,000
June, 20, 150 tons @ Rs.900 per ton	1,35,000
Inventory, June 30, 100 tons.	
Selling expenses (per ton of sold)	100

- i) Inventory valuation on June 30. ii) Amount of cost of goods sold for June.
iii) Compute Profit or loss for June.2014 following the issue of materials on LIFO Method.

UNIT – III

6. During first week of April 2016 the workman Mr. Kalyanaram manufactured 300 articles. He receives wages for a guaranteed 48 hours week at the rate of Rs. 60 per hour. The estimated time to produce one article is 10 minutes and under incentive scheme the time allowed is increased by 40%. Calculate his gross wages according to:

- a) Piece work with a guaranteed weekly wage.
b) Rowan premium bonus c) Halsey premium bonus 50% to workman.

7. Calculate the earnings of workers A and B under Straight Piece-rate system and time rate from

the following particulars:-

Normal rate per hour	= Rs. 58
Standard time per unit	= 20 seconds
Worker A produces 1,300 units per day and worker B produces 1,500 units per day (8 hours per day)	

UNIT – IV

8. Sriramachandra contractors, having undertaken a building construction work at a contract price Rs. 12,00,000 and started the execution of work on 1st April, 2012. The following details are given below.

	Rs.
Materials issued	24,000
Materials purchased	2,42,000
Wages at the site	1,54,000
Plant	2,20,000
Indirect Expenses	56,000
Material returned to store	12,000
Material lost by fire	4,400
Material at the site on 31 st March 2013	42,000
Plant at site on 31 st March 2013	1,98,000

Cash received for Rs.3,60,000 against the 80% work certified. The work certified but not certified amounted to Rs. 22,000. Prepare Contract Account and calculate the profit to be transferred to Profit and loss account.

9. The following is Trial Balance of Seetharam contractors engaged a contract No. 62 for the year ended with 31st March 2014

Particulars	Debit (Rs.)	Credit (Rs.)
Contractee Account (Cash Received)		4,00,000
Land & Buildings	1,60,000	
Creditors		92,000
Bank Balance	1,35,000	
Capital Account		5,00,000
<u>Expenses to contract Work</u>		
Materials	2,50,000	
Wages	1,40,000	
Expenses	57,000	
Plant	2,50,000	
Total	9,92,000	9,92,000

The work of No.62 was commenced on 1st April 2013. Material issued to the work during the year is for Rs. 2,22,000. Out of this cost of material Rs.6,000 was destroyed by fire. Cash received is 80% of the work certified. Uncertified work is worth Rs.16,000. Material at site on 31st March 2014 is Rs. 12,000. Plant is used for this work only. It is to be depreciated at 10%. Prepare Contract No.62 account and the Balance Sheet as on 31.03.2014.

UNIT – V

10. Given:

Sales 10,000 units
 Variable Cost Rs.1,00,000
 Sales value Rs. 2,00,000
 Fixed cost Rs.40,000

You are required to find out (a) Break even volume (b) Break even sales units (c) P/V Ratio and (d) Margin of Safety

11. From the following calculate (a) P/V Ratio (b) BEP (c) Margin of Safety (d) Variable Cost in both years.

Year	Sales (Rs.)	Profit (Rs.)
2016	1,50,000	20,000
2017	1,70,000	25,000

DSC: 2E: 5.2 - GOODS & SERVICE TAX FUNDAMENTALS

Unit I: Introduction: Overview of GST - Concepts – Limitations of VAT – Justification of GST Need for Tax Reforms - Advantages at the Central Level and State Level on introduction of GST

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.

Sri Venkateswara University

Model Question Paper

III B.Com

Semester – V, November, 2017

DSC 2E 5.2 – Goods & Services Tax – Fundamentals.

Time: 3 Hours

Max. Marks: 75

Section A

Answer any **Five** of the following Questions

(5 x 3= 15 Marks)

- Q 1.a)** What is GST b) write any 3 limitations of VAT c) Dual GST
d) Subsumed under GST e) Interstate Transaction f) Input tax Credit
g) State GST h) Service tax

Section - B

Answer any **ONE** Question from each unit.

(5 ×12 =60 Marks)

UNIT I

Q.2. Write advantages of Goods and Services Tax

OR

Q.3. What are the concepts of GST ? Give justification on imposing GST in India ?

UNIT II

Q.4. What is the comprehensive structure of GST in India ?

OR

Q.5. Give the brief note on Principles of GST.

UNIT III

Q.6 How do the levy of GST procedure on petroleum products and tobacco ?

OR

Q.7 Explain the taxes and duties outside the purview of GST

UNIT IV

Q.8. What are the advantages of IGST ?

OR

Q.9. Illustrate the Inter State transactions under GST

UNIT V

Q.10. What is Time supply of goods and services

OR

Q.11. What is input tax credit and explain it with suitable examples

1-5-102

DSC: 3E: 5.3 - ADVANCED CORPORATE ACCOUNTING

Unit I : Accounting standards – Importance of accounting standards in the procedure of accounting – List of Indian accounting standards – objectives of accounting standards Board and scope of accounting standards. – Accounting Standard 1: Disclosure of Accounting policies Accounting Standard 9: Revenue Recognition – Accounting standard 10 : Fixed assets (Theory only)

Unit II – Amalgamation : meaning – calculation of purchase consideration – Methods – Accounting procedure in preparation of journal entries and Balance sheet (simple problems only)

Unit III – Internal Reconstruction - Necessity of internal Reconstruction – Importance – Procedure for reducing share capital – Journal entries and preparation of Revised Balance sheet.

Unit IV : Liquidation : Meaning and modes of Liquidation in corporate accounts – Voluntary Liquidation – Procedure for preparation of Liquidator's statement of account – calculation of liquidator's remuneration (Simple problems)

Unit V : Holding companies : Definition of Holding Company and subsidiary company – Preparation of consolidated Balance Sheet of Holding company having ONE subsidiary company only - with common transactions, Minorities Interest, Capital Reserve, Revenue Profits Prior and post acquisition of shares by holding companies (Simple Problems)

REFERENCES:

1. Advanced accounting – SP Jaian & K.L. Narang
2. Corporate accountancy – S.N. Maheshwari
3. Advanced accounting Vol.1 hanif & mukherjee – MC Grawhill
4. Advanced accounting Vol.2 hanif & mukherjee – MC Grawhill
5. Advanced accounting - T.S.Reddy & A. Murthy – Margam publications Chennai.

**Sri Venkateswara University
Model Question Paper
III B.Com**

Semester – V, November, 2017

DSC 3E 5.3 – Advanced Corporate Accounting.

Time: 3 Hours

Max. Marks: 75

Section A

Answer any **Five** of the following Questions

(5 x 3= 15 Marks)

Section-A

- 1 Answer any five of the following questions.
 - a) Define Accounting standards
 - b) Going concern concept
 - c) What do you mean by Amalgamation
 - d) Purchase consideration
 - e) Internal Reconstruction
 - f) Liquidators Remuneration
 - g) Subsidiary company
 - h) Minority share holders Interest

Section-B

- 2 Answer one questions from each unit.

Unit-1

- 2) Explain the importance / Objective of accounting standards? Name any 5 Accounting

Standards?

(Or)

3) What is meant by Accounting concepts and conventions ? Explain any 5 concepts.

Unit-II

4) Godavari Ltd.. and Krishna Ltd. decided to Amalgamate and A new company is formed in the name of Go-Krishna Ltd. The new company is to take over both companies on 31-3-2017.

The balance sheet of both companies as follows.

Liability	Godavari Ltd. Rs.	Krishna Ltd. Rs.	Assets	Godavari Ltd. Rs.	Krishna Ltd. Rs
Share capital Rs.10 fully paid	5,00,000	3,00,000	Goodwill	1,00,000	80,000
Reserve funds	2,00,000	1,50,000	Land & Buildng	2,50,000	1,90,000
Profit & Loss a/c	30,000	50,000	Plant & Machinery	2,00,000	2,55,000
div. Equalisation	-	1,00,000	Patents &Trade	-	52,500
funds			Marks	2,00,000	1,50,000
Workman's	20,000	-	Stock	1,00,000	50,000
compensation fund	-	50,000	Sundry Debtors	-	20,000
Bank overdraft	1,00,000	1,20,000	Bills Receivable	50,000	2,500
Sundry Creditors	50,000	30,000	Cash at bank		
Bills Payable					
	9,00,000	8,00,000		9,00,000	8,00,000

Show how the amount payable to each company is arrived at and prepare the amalgamated Balance sheet of Godavari, Krishna Ltd.. Assuming amalgamation is done in the nature of purchase.

(Or)

5) Following is the Balance sheet of Mr. Venkatesh Ltd. as on 31 March 2017

Liabilities	Rs	Assets	Rs
Capital	42,500	Freehold Premises	25,000
Bank Loan	20,000	Furniture	3,500
Bills Payable	6,700	Motor van	12,800
Creditors	10,800	Stock	13,200
		Bills receivable	5,400
		Debtors	18,700

		cash	1,400
	80,000		80,000

On the above date the entire business was taken over by Deva Dhana Ltd.. The purchase consideration was paid as under.

- 1) 3,000 fully paid Rs.10 shares
- 2) The balance in cash

While recording the assets, the company valued the premises and stock at 10% and 20% above their book value respectively. Find out purchase consideration and pass necessary entries in the books of the Ding Dong Bell Ltd.. And show its Balance sheet after takeover of the business.

Unit-III

6) The following is the Balance sheet of Vikaash Ltd.. as at 31st March 2014.

Liabilities	Rs	Assets	Rs
Share Capital		Buildings	2,00,000
20,000 Equity shares of		Machinery	1,30,000
rs.10 each, fully paid up		Patents	40,000
10% Non-cumulative	2,00,000	Inventories	80,000
preference shares of		Debtors	55,000
Rs.100 each fully paid up		Preliminary expenses	10,000
8% Debentures		Profit and loss account	
trade creditors	50,000		1,85,000
Creditors for Expenses	1,00,000		
	3,30,000		
	20,000		
	7,00,000		7,00,000

With a view to reconstruct the company, it is proposed.

- a) To reduce (i) Equity shares by Rs.9 each.(ii) 10% Preference shares by Rs.40 each.(iii) 8% Debentures by 10%,(iv) Trade Creditor's claims by one- third ,(v) Machinery to Rs.70,000 and (vi) Inventories by Rs. 10,000,
- b) To provide Rs. 15,000 for bad debts
- c) To write off all the intangible assets; and
- d) To raise the rate of preference dividend to 13 % and the rate of debenture interest to 13.5%.

Assuming that the aforesaid proposals are duly approved and sanctioned, pass the journal entries to give effect to the above, and show the company's post reconstruction Balance sheet.

(Or)

7) The summarized Balance sheet of Anjana Company as at 31-3-2017 was as follows:

Liabilities	Rs	Assets	Rs
Authorized and issued capital: 20000 Equity shares of Rs. 10 each fully paid	20,00,000	Goodwill	2,00,000
10,000 6% cumulative Pref.shares of Rs. 100 each fully paid	10,00,000	Patents and Trade marks	1,00,000
Bank overdraft	7,00,000	Land and Buildings	15,00,000
Sundry creditors	5,00,000	Plant and Machinery	10,00,000
(note : The cumulative Preference Dividend is three years in arrear)		Stocks (Investment)	4,00,000
		Sundry debtors	3,00,000
		Issue and Preliminary expenses	1,00,000
		Profit and Loss a/c	6,00,000
	42,00,000		42,00,000

A scheme for the reduction of capital was approved on the following terms:

- (i) The preference shareholders agree that their shares be reduced to a fully paid value of Rs. 50 each and to accept equity shares of Rs.5 each fully paid in lieu of the dividends arrears.
- (ii) The Equity shareholders agree that their shares be reduced to a fully paid value of Rs.5 each.
- (iii) The authorized capital of the company is to remain at 30,00,000 divided into 4,00,000 Equity shares of Rs.5 each and 20,000.6% Cumulative preference shares of Rs.50 each.
- (iv) All the intangible assets are to be eliminated and bad debts of Rs..50,000 and obsolete shares of Rs.80,000 are to be written off.

Give journal entries necessary to record the reduction of capital and draw up a new Balance sheet after the scheme has been carried through.

UNIT-IV

- 8) Trimoorthy Co. Ltd. was placed in voluntary liquidation on 31st December 2016. When its balance sheet was as follows.

Liabilities	Rs	Assets	Rs.
Issued share Capital: 50.000 Equity shares of Rs.10 each fully Paid less calls in arrear amounting to Rs. 25,000	4,75,000	Freehold factory Plant and Machinery Motor Vehicles Stock Debtors Profit & Loss Account	5,80,000 2,89,000 57,500 1,86,000 74,000 2,14,000
6,000 5% cumulative preference shares ofRs.100 each fully paid	6,00,000		
Share premium account			
5% Debenture account	50,000		
Interest on Debentures	1,00,000		
Bank Overdraft	2,500		
Creditors	58,000		
	1,15,000		
	14,00,500		14,00,500

The Preference dividends are in arrears from 2013 onwards.

The company's articles provide that on liquidation, out of the surplus assets remaining after payment of liquidation cost and outside liabilities, there shall be paid firstly all arrears of preference dividend, secondly the amount paid up on the Preference shares together with a premium thereon of Rs.10 per share, and thirdly any balance then remaining shall be paid to the equity share holders.

The Bank overdraft was guaranteed by the directors who were called upon by the Bank to discharge their liability under the guarantee. The directors paid the amount to the Bank

The liquidator realized the assets as follows

	Rs.
Freehold Factory	7,00,000
Plant and Machinery	2,40,000
Motor Vehicles	59,000
Stock	1,50,000
Debtors	60,000
Calls in Arrears	25,000

Creditors were paid less discount of 5 per cent. The debenture and accrued interest were repaid on 31st march 2003.

Liquidation costs were Rs 3,820 and the Liquidator's remuneration was 2 per cent on the amounts realized.

Prepare the liquidator's statement of account

(Or)

9) Nagarjuna do.Ltd.. Went into liquidation with the following liabilities.

Secured creditors	Rs.40,000 (securities realized Rs.50,000)
Preferential creditors	Rs.1,200
Unsecured creditors	Rs.61,000
Liquidation expenses	Rs.500

The liquidator is entitled to a remuneration of 3% on the amount realised (including securities in the hands of secured creditors) and 1 ½% on the amount distributed to unsecured creditors. The various assets (excluding the securities in hand of the secured creditors) realized are Rs.52, 000.

Prepare the liquidator's statement of account showing the payment made to the unsecured creditors.

UNIT V

10) The following are the Balance sheet of Hemanth Ltd.. and its subsidiary Sabari Ltd.. as at 31st March 2017.

Liabilities	H Ltd. Rs.	S Ltd. Rs.	Assets	H Ltd.	S Ltd. Rs.
Fully paid equity shares of Rs.10 each	6,00,000	2,00,000	Machinery	3,90,000	1,35,000
			Furniture	80,000	40,000
			80% shares in S Ltd., at cost	3,40,000	-
General reserve	3,40,000	80,000	Stock	1,80,000	1,20,000
Profit & Loss	1,00,000	60,000	Debtors	50,000	30,000
a/c	70,000	35,000	Cash in Bank	70,000	50,000
Creditors					
	11,10,000	3,75,000		11,10,000	3,75,000

The following additional information is provided to you:

- (i) Profit & Loss account of Sabari Ltd. stood at Rs.30,000 on 1st April 2016 whereas general reserve has remained unchanged since that date.
- (ii) Hemanth Ltd.. acquired 80% shares in Sabari Ltd. on 1st October,2016 for Rs. 3,40,000 s mentioned above.

You are required to prepare consolidated balance sheet as at 31st march, 2017. Show all calculations clearly.

(Or)

11) From the Balance sheet given below prepare a consolidated balance sheet of Maruthi Ltd. and its subsidiary, Garuda Ltd.. as on 31-3-2017.

Liabilities	Maruthi Ltd.. Rs.	Garuda Ltd.. Rs	Assets	Maruthi Ltd.. Rs.	Garuda Ltd.. Rs
Share Capital of Rs. 10 each	1,20,000	30,000	Free hold		
Trade Creditors	15,000	5,000	Building at cost	72,000	25,000
General Reserve	25,000	6,000	Plant & Mach.	30,000	10,000
Profit & Loss	12,000	9,000	Stock at cost	18,000	3,000
A/c			Trade Debtors	22,000	7,000
			Bank Balance	5,000	5,000
			Share in Garuda Ltd.. 2000 shares of Rs.10 each	25,000	-
	1,72,000	50,000		1,72,000	50,000

At the date of acquisition by Maruthi Ltd.. of its holding of 2000 shares in Garuda Ltd.. the latter company had undistributed profits and reserve amounting to Rs.5000, none of which has been distributed since the date of acquisition.

ELECTIVE I : E-COMMERCE**DSC F 5.4 E-COMMERCE**

Unit-I: e-Commerce: Features of Electronic Commerce - Distinction between e-Commerce and e-Business - Types of Business Models: B2B, B2C, C2C - Benefits and Limitations of e-Commerce - Apps.

Unit-II: e-Business Applications: Integration and e-Business suits - ERP, e-SCM, e-CRM - Methods and benefits of e-Payment Systems –e-Marketing – Applications and issues

Unit-III: e-Business on different Fields: e-Tourism – e-Recruitment – e-Real Estate – e-Stock Market – e-Music/Movies - e-Publishing and e-Books.

Unit-IV: Concept of Online Education: Process - Methods - e-Content development and Deliveries - Major technologies used in e-Education - Online Testing - Methods - Future Trends.

Unit-V: Mobile Commerce: Ticketing - Me-Seva; Government and Consumer Services – e-Retailing - e-Groceries – Security challenges - Case Studies.

References:

1. Turban E. Lee J., King D. and Chung H.M: Electronic commerce-a Managerial Perspective, Prentice-Hall International, Inc.
2. Bhatia V., E-commerce, Khanna Book Pub. Co. (P) Ltd., Delhi.
3. Daniel Amor, E Business R (Evolution), Pearson Education.
4. Krishnamurthy, E-Commerce Management, Vikas Publishing House.
5. David Whiteley, E-Commerce: Strategy, Technologies and Applications, Tata McGraw Hill.
6. P. T. Joseph, E-Commerce: A Managerial Perspectives, Tata McGraw Hill.

DSC F 5.5 BUSINESS NETWORKS

Unit-I: Business Forms: Interrelation among Stakeholders – Business and Government – Business and Society: Social Network and Facebook.

Unit-II: Business Networking through ICT: Basic concepts – Uses and Application of Business Networks – Different Layers of Business Networks – Internet and Business Networks – Network Security.

Unit-III: Business Networking Systems and Devices: Communication Satellites – Servers – Cloud Computing – Sharing – Spectrum – Commercial issues.

Unit-IV: Customer Relationship Management: Establishing Network connection with customers – Forward and Backward Integration – Customer Data Base – Creation and Maintenance – Legal and Ethical Issues.

Unit-V: Business Analytics: Master Data Management – Data Warehousing and Mining – Data Integration – OLTP and OLAP.

References:

1. Jerry, FitzGerald and Alan Dennis, Business Data Communications and Networking, John Wiley & Sons.
2. Tanenbaum, A. S., Computer Networks, Pearson Education.
3. David A Stamper, Business Data Communications. Addison Wesley.
4. Business Analytics – Methods, Models and Decisions, James R. Evans, Prentice Hall.
5. Business Analytics - An Application Focus, Purba Halady Rao, PHI learning
6. R.N Prasad and Seema Acharya, Fundaments of Business Analytics, Wiley India.

DSC F 5.6 - PROJECT MANAGEMENT

Unit I : Basics of Project Management : Project Identification Process, Project Initiation – Phases of Project Management – Project Management Processes.

Unit II Project Planning and Control : Project Planning, Responsibility and Team Work – Project planning Process – CPM , PERT

Unit III : Project Execution control and Close out : Project Control, Purpose of Execution and control – Project Close – out Project Termination, Project Follow-up

Unit IV : Project Performance Measurement and Evaluation : Performance Measurement – Performance Evaluation, Challenges of Performance Measurement and Evaluation (Theory).

Unit V : Project Cost estimation and Budget; project evaluation ; Case Studies

REFERENCES:

1. Horald Kerzner, Project Management: A Systemic Approach to Planning, Scheduling and Controlling, CBS Publishers.
2. S. Choudhury, Project Scheduling and Monitoring in Practice, South Asian Publishers Pvt. Ltd.
3. P. K. Joy, Total Project Management: The Indian Context, Macmillan India Ltd.
4. John M Nicholas, Project Management for Business and Technology: Principles and Practice, Prentice Hall of India.
5. N. J. Smith (Ed), Project Management, Blackwell Publishing.
6. Jack R Meredith and Samuel J Mantel, Project Management: A Managerial Approach, John Wiley.
7. Vasanth Desai – Dynamics of Entrepreneurial Development.

SRI VENKATESWARA UNIVERSITY :: TIRUPATI

MODEL QUESTION PAPER

III B.Com., SEMESTER – V

DSC F 5.6 PROJECT MANAGEMENT

Time : 3 Hours

Max. Marks :75

Section – A

Answer any five of the following questions

(5 x 3 = 15 Marks)

1.
 - a. Project initiation
 - b. Project
 - c. PERT
 - d. Team work
 - e. Performance measurement
 - f. Project cost estimation
 - g. Project follow-up
 - h. Project execution cycle
 - i. Traditional methods of evaluation
 - j. Project control

Section – B

Answer any One question from each unit

(5 x 12 = 60)

UNIT – I

2. Describe the process of project identification.

OR

3. Explain the different phases of Project Management.

UNIT – II

4. Define project planning. Explain the steps involved in project planning.

OR

5. What is CPM? How is it useful in project control?

UNIT – III

6. Discuss the Project Termination. Explain the various reasons for the termination of a project.

OR

7. Define project execution. Explain the process of project execution.

UNIT – IV

8. What is project evaluation? Explain various types of project evaluation.

OR

9. What are the challenges or problems of Project evaluation?

UNIT - V

10. A car manufacturer has decided to make a significant investment into expanding its operation in South Africa by setting up a large assembly unit. The estimations are as follows

Initial investment is Rs. `6,00,000.

Forecast net income from the project is detailed below:

Year	Cash inflows (Rs `)
Year 1	1,40,000
Year 2	1,45,000
Year 3	1,55,000
Year 4	1,62,500
Year 5	1,48,000

- (i) Calculate the projected payback time for the project to the nearest month.

- (ii) Calculate the Net Present Value of the project using a discount factor of 5% and comment on the attractiveness of the project.

Discount factors at 10 % are;

Year 1 = 0.909, Year 2 = 0.826, Year 3 = 0.751, Year 4 = 0.683,
Year 5 = 0.62.

11.Think about it: Characteristics of a project involving the installation of a new server. The installation of a new server in an office is one example of a project. It involves a single, definable purpose, which is to set up a new server-based network for the office. It uses the skills of a number of different people, from individual company users to external specialist IT consultants. Different people will write the software, configure the hardware, install the system and test and commission it. As with many projects, the team itself is multidisciplinary. Installing the server and commissioning it is a unique process for the IT consultants, in that every office is different and the demands of any particular client will be specific to that client. The project will always be somewhat unfamiliar, because new hardware and software are coming onto the market all the time, and hence the resulting system requirements will be constantly changing. The project is highly interdependent, in that the input of each person in the multidisciplinary team must work properly in order for the overall new system to work. The installation team is also temporary. It works together on the server installation. As soon as the installation is complete and the system is commissioned, the team ceases to exist and each individual either moves onto new installation projects or moves back into their standard or normal functional roles. The installation may be interlinked, in that it may take place in conjunction with hardware or software upgrades. Most IT managers would take advantage of a server upgrade to carry out other network improvement works such as replacing PCs or upgrading software. The project is designed to bring about change in the form of a new server that presumably will make the company more efficient. The overall

level of change risk is high and some form of standby provision is obviously necessary. All obvious precautions such as backing up all data, running duplicate systems, phased commissioning and so on should be put in place to reduce the impact and magnitude of change risk.

Questions:

1. Where might the installation of a new server not be regarded as a project? How could project objectives (installation of the new server) be accurately coordinated with organisational objectives (general software and hardware upgrade)?

ELECTIVE 2 - COMPUTER APPLICATIONS**DSC F 5.4 - DATABASE MANAGEMENT SYSTEM**

Unit-I: Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management Systems, Classification of Database Management System.

Unit-II: File-Based System, Drawbacks of File-Based System , DBMS Approach, Advantages of DBMS, Data Models , Components of Database System, Database Architecture, DBMS Vendors and their Products.

Unit-III: Entity-Relationship Model: Introduction, The Building Blocks of an Entity-Relationship, Classification of Entity Sets , Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, aggregation and composition, CODD'S Rules, Relational Data Model , Concept of key, Relational Integrity. Normalization (1NF,2NF,3NF & BCNF).

Unit-IV: Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

Unit -V: PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements ,Data Types, Control Structure,, Steps to Create a PL/SQL Program, Iterative Control ,Cursors , Steps to Create a Cursor , Procedure, Function ,Packages ,Exceptions Handling, Database Triggers, Types of Triggers.

Text Books:

1. S. Sumathi, S. Esakkirajan, Fundamentals of Relational Database Management Systems.
2. Ivan Bayross, SQL, PL/SQL The Programming Language of Oracle, BPB Publications.

Reference Books:

1. Paneerselvam: Database Management Systems, PHI.
2. Bipin C. Desai, "An Introduction to Database Systems", Galgotia Publications.
3. Korth, Database Management systems.
4. Navathe, Database Management systems.

SRI VENKATESWARA UNIVERSITY :TIRUPATI

THIRD YEAR BA / B.Com (CA) / B.Sc- 5th SEMESTER EXAMINATIONS

DSC F 5.4 - DATABASE MANAGEMENT SYSTEM

Time: 3Hrs

Max. Marks:75

Section - A

Answer any Five of the following. All Questions carry equal marks.

5x3=15 Marks

1.

- a) What is DBMS? Objectives of DBMS.
- b) Write about Data types in SQL.
- c) Describe classification of entity sets.
- d) What is a procedure? Explain the steps to create a procedure.
- e) Write about primary key and foreign key constraints.
- f) Briefly explain Embedded SQL.
- g) Write about Data Models.
- h) Write about Relationship Classification.
- i) Write about exceptions in PL/SQL
- j) What is view and how to create a view in SQL.

Section - B

Answer one question from each unit. All Questions carry equal marks. 5×12=60 Marks

UNIT-1

2. Explain about file system.

(OR)

3. Explain classification of DBMS.

UNIT-2

4. Explain the process of converting ER Diagram to Tables.
(OR)
5. Define Specialization and Generalization. Explain the constraints on Generalization and Specialization with examples.

UNIT-3

6. Explain 1NF, 2NF, 3NF and BCNF.
(OR)
7. Explain CODD's rules.

UNIT-4

8. Explain DDL Commands with Syntax and examples.
(OR)
9. a) Explain join operations in SQL.
b) Explain Aggregate functions in SQL.

UNIT-5

10. Explain PL/SQL Structure with suitable example
(OR)
11. What is a Trigger? Explain the creation of different types of triggers with syntax.

DSC F 5.5 - WEB TECHNOLOGY

Unit-I:

Introduction: HTML, XML, and WWW, Topologies, Bus, Star, Ring, Hybrid, Tree, Lan, Wan, Man.

HTML: Basic HTML, Document body, Text, Hyper links, Adding more formatting, Lists, Tables using colors and images.

Unit-II:

More HTML: Multimedia objects, Frames, Forms towards interactive, HTML document heading.

Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

Unit-III:

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions.

Unit-IV:

Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling, built-in objects, events.

Unit-V:

DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images, multiple pages in single download, text only menu system.

Text Books

1. Web Technology, Chris Bates, Wiley Publications.

Reference Books

1. Uttam Kumar Roy, Web Technologies, Oxford University Press.
2. Black Book HTML 5.0
3. Complete reference HTML 5.

SRI VENKATESWARA UNIVERSITY :TIRUPATI

THIRD YEAR BA / B.COM(CA) / B.Sc - 5TH SEMESTER EXAMINATIONS

DSC F 5.5 – WEB TECHNOLOGY

Time: 3Hrs

Max. Marks:75

Section - A

Answer any Five of the following. All Questions carry equal marks. 5×3=15 Marks

1.

- k) What is internet? And applications of Internet.
- l) What is network topology and types of topologies?
- m) Describe <HR> Tag.
- n) What is a frame? Explain the steps to create a frame in HTML.
- o) Write about box and color properties.
- p) Briefly explain string manipulations.
- q) Write about document object model.
- r) How to create new window in DHTML.
- s) How to create message and confirmation window in javascript.
- t) Write about status bar.

Section - B

Answer one question from each unit. All Questions carry equal marks. 5×12=60 Marks

UNIT-1

2. What is HTML? Explain structure of HTML and give suitable example.

(OR)

3. Explain about hyperlinks in HTML.

UNIT-2

4. What is style sheet? How to create a table with style sheets.

(OR)

5. Define different styles in CSS with examples.

UNIT-3

6. Explain javascript functions with suitable example.

(OR)

7. A). Write a program to demonstrate the radio buttons in javascript.

B). How to handle a list in javascript with proper example.

UNIT-4

8. A). Describe regular expressions in javascript.

B). How to handle errors in javascript.

(OR)

9. a) Explain join operations in SQL.

b) Explain Aggregate functions in SQL.

UNIT-5

10. Explain rollover buttons with suitable example.

(OR)

11. Explain about text only menu system with suitable example.

DSC F 5.6 - PROJECT MANAGEMENT

Unit I : Basics of Project Management : Project Identification Process, Project Initiation – Phases of Project Management – Project Management Processes.

Unit II Project Planning and Control : Project Planning, Responsibility and Team Work – Project planning Process – CPM , PERT

Unit III : Project Execution control and Close out : Project Control, Purpose of Execution and control – Project Close – out Project Termination, Project Follow-up

Unit IV : Project Performance Measurement and Evaluation : Performance Measurement – Performance Evaluation, Challenges of Performance Measurement and Evaluation (Theory).

Unit V : Project Cost estimation and Budget; project evaluation ; Case Studies

REFERENCES:

1. Horald Kerzner, Project Management: A Systemic Approach to Planning, Scheduling and Controlling, CBS Publishers.
2. S. Choudhury, Project Scheduling and Monitoring in Practice, South Asian Publishers Pvt. Ltd.
3. P. K. Joy, Total Project Management: The Indian Context, Macmillan India Ltd.
4. John M Nicholas, Project Management for Business and Technology: Principles and Practice, Prentice Hall of India.
5. N. J. Smith (Ed), Project Management, Blackwell Publishing.
6. Jack R Meredith and Samuel J Mantel, Project Management: A Managerial Approach, John Wiley.
7. Vasanth Desai – Dynamics of Entrepreneurial Development.

SRI VENKATESWARA UNIVERSITY :: TIRUPATI

MODEL QUESTION PAPER

III B.Com., SEMESTER – V

DSC F 5.6 PROJECT MANAGEMENT

Time : 3 Hours

Max. Marks :75

Section – A

Answer any five of the following questions

(5x 3 = 15 Marks)

1.
 - a. Project initiation
 - b. Project
 - c. PERT
 - d. Team work
 - e. Performance measurement
 - f. Project cost estimation
 - g. Project follow-up
 - h. Project execution cycle
 - i. Traditional methods of evaluation
 - j. Project control

Section – B

Answer any One question from each unit

(5 x 12 = 60)

UNIT – I

2. Describe the process of project identification.

OR

3. Explain the different phases of Project Management.

UNIT – II

4. Define project planning. Explain the steps involved in project planning.

OR

5. What is CPM? How is it useful in project control?

UNIT – III

6. Discuss the Project Termination. Explain the various reasons for the termination of a project.

OR

7. Define project execution. Explain the process of project execution.

UNIT – IV

8. What is project evaluation? Explain various types of project evaluation.

OR

9. What are the challenges or problems of Project evaluation?

UNIT - V

10. A car manufacturer has decided to make a significant investment into expanding its operation in South Africa by setting up a large assembly unit. The estimations are as follows

Initial investment is Rs. `6,00,000.

Forecast net income from the project is detailed below:

Year	Cash inflows (Rs `)
Year 1	1,40,000
Year 2	1,45,000
Year 3	1,55,000
Year 4	1,62,500
Year 5	1,48,000

- (iii) Calculate the projected payback time for the project to the nearest month.

- (iv) Calculate the Net Present Value of the project using a discount factor of 5% and comment on the attractiveness of the project.

Discount factors at 10 % are;

Year 1 = 0.909, Year 2 = 0.826, Year 3 = 0.751, Year 4 = 0.683,
Year 5 = 0.62.

12.Think about it: Characteristics of a project involving the installation of a new server. The installation of a new server in an office is one example of a project. It involves a single, definable purpose, which is to set up a new server-based network for the office. It uses the skills of a number of different people, from individual company users to external specialist IT consultants. Different people will write the software, configure the hardware, install the system and test and commission it. As with many projects, the team itself is multidisciplinary. Installing the server and commissioning it is a unique process for the IT consultants, in that every office is different and the demands of any particular client will be specific to that client. The project will always be somewhat unfamiliar, because new hardware and software are coming onto the market all the time, and hence the resulting system requirements will be constantly changing. The project is highly interdependent, in that the input of each person in the multidisciplinary team must work properly in order for the overall new system to work. The installation team is also temporary. It works together on the server installation. As soon as the installation is complete and the system is commissioned, the team ceases to exist and each individual either moves onto new installation projects or moves back into their standard or normal functional roles. The installation may be interlinked, in that it may take place in conjunction with hardware or software upgrades. Most IT managers would take advantage of a server upgrade to carry out other network improvement works such as replacing PCs or upgrading software. The project is designed to bring about change in the form of a new server that presumably will make the company more efficient. The overall

level of change risk is high and some form of standby provision is obviously necessary. All obvious precautions such as backing up all data, running duplicate systems, phased commissioning and so on should be put in place to reduce the impact and magnitude of change risk.

Questions:

2. Where might the installation of a new server not be regarded as a project? How could project objectives (installation of the new server) be accurately coordinated with organisational objectives (general software and hardware upgrade)?

SRI VENKATESWARA UNIVERSITY : TIRUPATI

TABLE-6: B.COM (CA)- SEMESTER – VI – W.E.F. 2017-18

Sl. No.	Course	Name of the subject	Total Marks	Mid. Sem. Exam	Sem. End Exam	Teaching Hours**	Credits
1.	DSC 1 G	6.1 Advanced Cost Accounting	100	25	75	6	4
2.	DSC 2 G	6.2 Auditing	100	25	75	6	4
3.	DSC 3 G	6.3 Management Accounting	100	25	75	6	4
4.	Elective-DSC 1 H/Inter-disp./Gen. Elec.	Cluster Electives 1. A e-Commerce 6.4 e-Payments System Practical's 6.5 Tally Practical's 6.6 Project Work: Real time student project may be submitted	100 50 100 50 100	25 25	75 50 75 50 100	5 2 5 2 5	4 2 4 2 5
5.	Elective-DSC 2 H/Inter-disp./Gen. Elec.						
6.	Elective-DSC 3 H/Inter-disp./Gen. Elec.	2. Computer Applications 6.4 e-Commerce Applications 6.5 Tally Practical's (50+50) 6.6 Project work : Working on the application of Tally package in organisations/ Internship/ Projects in e-commerce companies on the Design and creation of websites					
Total			700			37	29
Grand Total							

NOTE* OPT ONE ELECTIVE FROM THE ABOVE ELECTIVES AND THAT SHOULD BE RELEVANT TO THE ELECTIVE IN THE V SEMESTER I.E. IF TAKEN FIRST ELECTIVE IN V SEMESTER IN VI SEMESTER ALSO SHOULD SELECT FIRST ELECTIVE VISE VERSA

NOTE:# PROJECT WORK EVALUATED BY THE COMMERCE EXTERNAL EXAMINER

TALLY PRACTICAL'S SHOULD BE EVALUATED BY THE COMMERCE EXTERNAL EXAMINER

DSC 1 G 6.1 ADVANCED COST ACCOUNTING

Unit-I: Preparation of Reconciliation statement : Reasons for the differences between the cost profit and Financial Profit – Reconciliation of the cost profit with the financial profit vice versa (including problems)

Unit-II: Process Costing : Introduction and meaning of process costing – Manufacturing companies with suitability of process costing – preparation of process accounts with loss in weight, normal loss, abnormal loss and abnormal gain (including problems)

Unit-III: Operating Costing : meaning and the various types of operating costing businesses i.e. Transport costing Problems with Transport Costing only, relating to – operating Cost per kilo meter and passenger Kilo meter.

Unit-IV: Standard Costing - meaning of standard cost and actual cost – variances – problems on Material variances only – Material cost variance, Material price variance, Material Quantity variance, Material Mix variance, Material sub usage variance, Material yield variance etc.

Unit-V: Budget Costing : Meaning of budget – Importance of budget costing – Preparation of budgets – Problems on the preparation of fixed budget and flexible budget only.

REFERENCES:

1. Cost Accounting and Management Accounting – T.S. Reddy and Hariprasad Reddy, Margham publications, Chennai
2. Methods of costing – S.P. Jain and K.L.Narang Kalyani Publishers
3. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
4. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
5. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
6. S.N .Maheswari – Principles of Management Accounting.
7. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.
8. Sharma & Shashi Gupta – Management Accounting, Kalyani Publishers. Ludhiana.
9. Cost Accounting problems – Khanna Ahuja Pandey

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Model Paper
III B.Com
Semester – VI, April, 2018
DSC 1G 6.1 – ADVANCED COST ACCOUNTING

Time: 3 hours

Max.Marks: 75 M

Section - A

Answer any FIVE questions, each question carries 3 marks

5 X3=15

1. a) Companies with suitability of process costing b) Abnormal Loss
c) Features of process costing d) Operating costing
e) Transport costing f) Standard costing
g) Material variance h) Budget

Section - B

Answer any ONE question from each unit.
Each question carries 12 marks

5X12 =60

UNIT-I

2. Prepare a statement of reconciliation from the following:

	Rs.
Net loss as per cost accounts	34,500
Net loss as per financial accounts	40,950
Works overhead under recovered in costing	6,240
Administrative overhead recovered in excess	3,400
Depreciation recovered in costing	11,200
Depreciation charged in financial accounts	12,500
Interest on investments not included in costing	6,000
Goodwill written off	5,000
Provision for doubtful debts in financial accounts	1,260
Stores adjustment credit in financial accounts	950
Loss of stock charged in financial accounts	3,000

(or)

3. In a factory, works overheads are absorbed at 100% of labour cost and office overheads at 20% of works cost.

Prepare i) Cost Sheet ii) Profit & loss account and iii) Reconciliation Statement if the total expenditure consists of :

	Rs.
Material	24,600
Wages	33,200
Factory expenses	32,840
Office expenses	22,420

10% of the output is in stock at the end and sales are Rs.1,38,400

UNIT-II

4. 100 units are introduced into process A at a cost of Rs.9,600 and an expenditure of Rs.4,800 is incurred. From the past experience, it is assessed that wastage normally arises to the extent of 15% of units introduced. The scrap value is at Rs.10 per unit. The actual output of process A is 90 units, transferred to process B. In process the output is 75 units which is transferred to Finished goods account and the scrap expected in B is 10%. The expenditure of Materials for Rs.4,800, Labour Rs.3,600 and other expenses Rs.5,400. The scrap value is at Rs.15 per unit Prepare Process Accounts, Abnormal Gain & Loss Account and Normal Loss Account.

(or)

5. The product of a company passes through two processes to completion known as X and Y. From past experience it is ascertained that loss is incurred in each process as:
Process X – 2% Process Y – 5%
In each case, the percentage of loss is computed on the number of units entering the process concerned. The loss of each process possesses a scrap value. The loss of processes X and Y is sold at Rs. 5 per 100 units. The output of each process passes immediately to the next process and the finished units are passed into stock.

	Process X	Process Y
	Rs.	Rs.
Materials consumed	6,000	4,000
Direct labour	8,000	6,000
Manufacturing expenses	1,000	1,000

20,000 units have been issued to Process X at a cost of Rs.10,000. The output of each process has been as under:

Process X 19,500; Process Y 18,800

Prepare Process Accounts.

UNIT-III

6. Sri Lakshmi Travels, a transport company is running a fleet of six buses between two towns 75 kms.apart. The seating capacity of each bus is 40 passengers. The following particulars are available for the month of April 2017.

	Rs.
Wages of Drivers, Conductors, etc.	14,400
Salaries of office and supervisory staff	15,000
Diesel oil., etc.	20,320
Repairs and maintenance	1,200
Taxes and insurance	2,400
Depreciation	3,900
Interest and other charges	3,000

The actual passengers carried were 80% of the capacity. All the buses run all the days in the month. Each bus made one round trip per day. Find out the cost per passenger kilometre.

OR

7. Mr. Srinivasulu furnishes you the following data and wants you to compute the cost per running km of vehicle A.

	Rs.
Cost of vehicle	4,50,000
Road licence per year	1,800
Annual supervision & salaries	7,200
Driver's wages per hour	40
Cost of fuel per litre	52
Repairs & maintenance per km	22
Tyres cost per km	4
Insurance premium p.a.	1,700
Garage rent per year	15,300
Kms run per litre	20
Kms run during the year	15,000
Estimated life of vehicle in kms	1,00,000
Average tonnage carried	6

Charge interest at 5% per annum on cost of vehicle. The vehicle runs 20 kms per hour on an average.

UNIT-IV

8. From the following particulars Calculate a) Material price variance b) Material usage variance and c) Material cost variance

Material purchased - 3,000 kgs at Rs.6 per kg

Standard quantity of material fixed for one unit of finished product - 25 kgs at Rs.4 per kg.

Opening stock of material - Nil

Closing stock of material - 500 kgs

Actual output during the period - 80 units.

(or)

9. From the following information of product No.888, calculate

- i) Material cost variance
- ii) Material price variance
- iii) Material usage variance
- iv) Material mix variance

Material	Standard Qty. in Kgs	Standard Price Rs.	Actual quantity in Kgs	Actual price Rs.
X	20	5	24	4.00
Y	16	4	14	4.50
Z	12	3	10	3.25
	<hr/>		<hr/>	
	48		48	

UNIT-V

- 10.** A company which supplies its output on contract basis as component to an assembling firm has a contract to supply 10,000 units of its only product during 2017. The following were the budgeted expenses and revenue.

Material	Rs. 15 per unit
Wages	Rs. 10 per unit
Works expenses – (Fixed)	Rs. 40,000
Variable	Rs. 4 per unit
General expenses (all fixed)	Rs. 60,000
Profit is 20% on sale price.	

Prepare the budget for 2017 showing the costs and profit.

(or)

- 11.** Draw up a flexible budget for production at 75% and 100% capacity on the basis of the following data for a 50% activity.

	Per unit in Rs.
Materials	100
Labour	50
Variable expenses (direct)	10
Administrative expenses (50% fixed)	40,000
Selling and Distribution expenses (60% fixed)	50,000
Present production (50% activity)	1,000 units

DSC 2G 6.2 AUDITING

Unit-I: Auditing: Meaning – Objectives – Errors and Frauds - Importance of Auditing – Auditing as a Vigil Mechanism – Role of Auditor in checking corporate frauds.

Unit-II: Types of Audit: Based on Ownership and time - Independent, Financial, Internal, Cost, Tax, Government, Secretarial audits.

Unit-III: Planning of Audit: Steps to be taken at the commencement of a new audit – Audit programme - Audit note book - Internal check, internal audit and internal control.

Unit-IV: Vouching and Investigation: Vouching of cash and trading transactions – Investigation, Auditing vs. Investigation

Unit-V: Company Audit and Auditors Report: Auditor's Qualifications – Appointment and Reappointment – Rights, duties, liabilities and disqualifications - Audit report: Contents.

References:

1. S.Vengadamani, “Practical Auditing”, Margham Publications, Chennai.
2. Ghatalia, “Principles of Auditing”, Allied Publishers Pvt. Ltd., New Delhi.
3. Pradeesh Kumar, Baldev Sachdeva & Jagwant Singh, “Auditing Theory and Practice, Kalyani Publications, Ludhiana.
4. N.D. Kapoor, “Auditing”, S. Chand, New Delhi.
5. R.G. Saxena, “Principles and Practice of Auditing”, Himalaya Publishing House, New Delhi.
6. Jagadesh Prakesh, “Principles and Practices of Auditing” Kalyani Publications, Ludhiana.
7. Kamal Gupta and Ashok Gupta, “Fundamentals of Auditing”, Tata McGraw Hill
8. B.N. Tondan, “Practical Auditing”, S.Chand, New Delhi.

Sri Venkateswara University
Model Paper
III B.Com
Semester – VI, April, 2018
DSC 2G 6.2 – AUDITING

Time: 3 hours

Max.Marks: 75 M

Section – A

Answer any FIVE questions, each question carries 3 marks

5 X3=15

- | | |
|--------------------|----------------------------------|
| 1. a) Auditing | b) Auditing as a Vigil Mechanism |
| c) Internal Audit | d) Government Audit |
| e) Audit Note Book | f) Investigation |
| g) Vouching | h) Auditors qualifications |

Section – B

Answer any ONE question from each unit.
Each question carries 12 marks

5X12 =60

UNIT-I

2. Define Auditing. Explain objectives of Auditing

(or)

3. Describe the importance of Auditing.

UNIT-II

4. Describe the various types of Audit.

(or)

5. Distinguish between Cost Audit and Financial Audit

UNIT-III

6. What steps should be taken in to A/c vehicle commencement of New Audit?

(or)

7. What are the contents of Audit programme?

UNIT-IV

8. “Vouching is the essence of Auditing”. Discuss?

(or)

9. Distinguish between Audit and Investigation?

UNIT-V

10. What are the Rights and duties of company Auditor?

(or)

11. What are the contents of Audit Report?

DSC 3G 6.3 MANAGEMENT ACCOUNTING

Unit–I: Management Accounting: Interface with Financial Accounting and Cost Accounting – Scope and limitations of management accounting - Functions of Management Accounting and its importance (Theory only)

Unit–II: Financial statement analysis - Financial Statement analysis and interpretation Comparative statements – Common size analysis and trend analysis (including problems).

Unit–III: Ratio Analysis: Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability, turnover or activity and solvency ratios (including problems).

Unit–IV: Fund Flow Statement: Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (including problems).

Unit–V: Cash Flow Statement: Concept of cash flow – Preparation of cash flow statement - Uses and limitations of cash flow analysis (including problems).

References:

1. Cost Accounting and Management Accounting – T.S. Reddy and Hariprasad Reddy, Margham publications, Chennai
2. S.N. Maheswari, A Textbook of Accounting for Management, S. Chand Publishing, New Delhi
3. I.M Pandey, “Management Accounting”, Vikas Publishing House, New Delhi,
4. Shashi K. Gupta & R.K. Sharma, “Management Accounting: Principles and Practice”, Kalyani Publishers, Ludhiana.
5. Jawahar Lal, Accounting for Management, Himalaya Publishing House, New Delhi.
6. Charles T. Horngren, [et.al](#), “Introduction to Management Accounting” Person EducationIndia, New Delhi, 2002.
7. Murthy & Guruswamy – Management Accounting, Tata McGraw Hill, New Delhi.
8. Dr. Kulsreshtha & Gupta – Practical problems in Management Accounting.
9. Bhattacharya, D., “Management Accounting”, Pearson Education India, New Delhi.
10. S.P. Gupta – Management Accounting, S. Chand Publishing, New Delhi.

Sri Venkateswara University
Model Paper
III B.Com
Semester – VI, April, 2018
DSC 3G 6.3 – MANAGEMENT ACCOUNTING

Time: 3 hours

Max.Marks: 75 M

Section – A

Answer any FIVE questions, each question carries 3 marks

5 X3=15

- | | |
|--------------------------|----------------------------------|
| 1. a) Liquidity Ratios | b) Gross Profit Ratio |
| c) Funds from operation | d) Operating Activities |
| e) Cash flow statement | f) Limitations of Ratio Analysis |
| g) Common size statement | h) Cost Accounting |

Section – B

Answer any ONE question from each unit.

Each question carries 12 marks

5X12 =60

UNIT-I

2. Explain scope and limitations of Management Accounting

(or)

3. Explain the functions & importance of Management Accounting

UNIT-II

4. Dhandapani & Co. Ltd., furnishes the following Balance Sheets for the years 2014 and 2015.
Prepare common-size balance sheets.

Balance sheets

Liabilities	2014 Rs.	2015 Rs.	Assets	2014 Rs.	2015 Rs.
Share capital	2,00,000	3,00,000	Buildings	4,00,000	4,00,000
Reserves	6,00,000	7,00,000	Machinery	6,00,000	10,00,000
10% Debentures	2,00,000	3,00,000	Stock	2,00,000	3,00,000
Creditors	3,00,000	5,00,000	Debtors	2,00,000	2,50,000
Bills payable	1,00,000	80,000	Cash at Bank	1,00,000	50,000
Tax payable	1,00,000	1,20,000			
	<hr/>	<hr/>		<hr/>	<hr/>
	15,00,000	20,00,000		15,00,000	20,00,000

(or)

5. The following are the extracts from the income statements of Bright Ltd., for the 6 years ending 2015. You are required to calculate trend percentages, taking 2014 as the base year and give two major conclusions you can draw.

(figures in thousands)

Particulars	2012	2013	2014	2015	2016	2017
Sales	300	340	420	480	520	600
Cost of goods sold	180	204	256	287	300	330
Office Expenses	40	42	45	50	55	60
Selling expenses	20	25	30	40	50	60
Net profit/loss	60	69	89	103	115	150

UNIT-III

6. The following figures relate to the trading activities of a company for the year ended 31-03-2016.

Particulars	Rs.	Particulars	Rs.
Sales	1,00,000	Salary of salesmen	1,800
Purchases	70,000	Advertising	700
Closing stock	14,000	Travelling expenses	500
Sales returns	4,000	Salaries (office)	3,000
Dividend received	1,200	Rent	6,000
Profit on sale of fixed assets	600	Stationery	200
Loss on sale of shares	300	Depreciation	1,000
Opening stock	11,000	Other expenses	2,000
		Provision for tax	7,000

You are required to calculate

- | | |
|-----------------------|---------------------------|
| 1. Gross profit ratio | 2. Operating profit ratio |
| 3. Operating ratio | 4. Net profit ratio |

(or)

7. The following figures are extracted from the Balance Sheet of X Ltd., as on 31st December:

	2012 Rs.	2013 Rs.
Stock	25,000	40,000
Debtors	10,000	16,000
Cash at Bank	5,000	4,000
Creditors	8,000	15,000
Bills payable	2,000	3,000
Provision for Taxes	5,000	7,000
Bank Overdraft	5,000	15,000

Calculate the Current Ratio and Quick Ratio for the two years.

UNIT-IV

8. Prepare a schedule of changes in working capital from the following Balance Sheets:

Balance Sheets

Liabilities	2014 Rs.	2015 Rs.	Assets	2014 Rs.	2015 Rs.
Share capital	50,000	50,000	Fixed assets	18,000	28,000
10% Debentures	10,000	20,000	Investments:		
Bills payable	18,000	6,000	Non-trading	10,000	10,000
Outstanding expenses	6,000	9,000	Trading	8,000	9,000
Trade Creditors	33,000	40,000	Inventories	12,000	18,000
			Trade Debtors	40,000	48,000
			Accrued interest	4,000	6,000
			Unexpired insurance	-	3,000
			Cash at bank	17,000	2,000
			Cash in hand	8,000	1,000
	<hr/>	<hr/>		<hr/>	<hr/>
	1,17,000	1,25,000		1,17,000	1,25,000

(or)

9. The following are the summarised Balance Sheets of Malar Industries Ltd., as on 31st December 2009 and 2010:

Balance Sheet

Liabilities	2009 Rs.	2010 Rs.	Assets	2009 Rs.	2010 Rs.
<i>Capital:</i>			Fixed Assets	41,000	40,000
7% Redeemable preference shares	-	10,000	<i>Less: Depreciation</i>	<u>11,000</u>	<u>15,000</u>
Equity shares	40,000	40,000		30,000	
General reserve	2,000	2,000	<i>Current assets:</i>		
Profit & Loss A/c	1,000	1,200	Debtors	20,000	24,000
Debentures	6,000	7,000	Stock	30,000	35,000
<i>Current Liabilities:</i>			Prepaid expenses	300	500
Creditors	12,000	11,000	Cash	1,200	3,500
Provision for tax	3,000	4,200			
Proposed dividend	5,000	5,800			
Bank overdraft	12,500	6,800			
	<hr/>	<hr/>		<hr/>	<hr/>
	81,500	88,000		81,500	88,000

- Prepare: i) Statement showing changes in the working capital.
 ii) A statement of sources and applications of funds.

UNIT-V

- 10.** From the following data you are required to calculate the cash from operations:
 funds from operations for the year 1998 Rs.84,000. Current assets and liabilities as on 1-4-08
 and 31-03-09 were as follows:

	1-4-08 Rs.	31-03-09 Rs.
Trade creditors	1,82,000	1,94,000
Trade debtors	2,75,000	3,15,000
Bills receivable	40,000	35,000
Bills payable	27,000	31,000
Inventories	1,85,000	1,70,000
Trade investments	40,000	70,000
Outstanding expenses	20,000	25,000
Prepaid expenses	5,000	8,000

(or)

- 11.** From the following Balance Sheets as on 31-03-15 and 31-03-14, prepare a Cash Flow

Statement:

Liabilities	31.03.2015 Rs.	1.04.2014 Rs.	Assets	31.03.2015 Rs.	1.04.2014 Rs.
Share capital	1,50,000	1,00,000	Fixed assets	1,50,000	1,00,000
Profit & Loss A/c	80,000	50,000	Goodwill	40,000	50,000
General reserve	40,000	30,000	Stock	80,000	30,000
6% Debentures	60,000	50,000	Debtors	80,000	50,000
Creditors	40,000	30,000	Bills Receivable	20,000	30,000
Outstanding exp.	15,000	10,000	Bank	15,000	10,000
	<hr/> 3,85,000	<hr/> 2,70,000		<hr/> 3,85,000	<hr/> 2,70,000

CLUSTER ELECTIVE 1 A – E COMMERCE

DSC H 6.4 E-PAYMENTS SYSTEM

Unit-I: e-Cash and Virtual Money: Electronic Data Interchange (EDI) - NEFT/RTGS/Electronic Payment modes - Foundations of e-Cash and Issues; Security, Anonymity, Untraceability, Virtual currencies, Bitcoin.

Unit-II: Automated Clearing and Settlement: Process of Real Time Gross Settlement System - Net Settlement -ATM Networks - Fedwire, CHIPS and SWIFT.

Unit-III: e-Payment Security and Digital Signature: Cryptographic Methods - Hash functions - Public/Private Key methods: RSA - Digital Signatures - Certification Process - Digital identity Documents and Remote Authentication.

Unit-IV: Mobile Payments: Wireless payments, Digital Wallets, Google Wallet – Obopay - Security Challenges.

Unit-V: Electronic Invoice and Payment System: Electronic Statement Delivery - EIPP providers - Biller service providers - Customer service providers - Reconciliation through Bank - Invoice Paper elimination - Scan-based trading (SBT).

References:

1. Domonique Rambure and Alec Nacamuli, “Payment Systems: From the Salt Mines to the Board Room”, Palgrave MacMillan.
2. Weidong Kou, “*Payment Technologies for E-Commerce*”. Springer, Germany.
3. Donal O’Mahony, Michael Peirce and Hitesh Tewari, “Electronic Payment Systems”, Artech House, Inc.
4. M. H. Sherif, Protocols for Secure Electronic Commerce, Boca Raton, Fla, CRC Press.

MODEL QUESTION PAPER
VI SEMESTER-B.COM (CA)/ B.A;B.Sc(CA)
(CHOICE BASED CREDIT SYSTEM)
E –PAYMENT SYSTEM

Time: 3 Hrs

Max Marks: 75

SECTIONS –A

1. **Answer any FIVE questions, each question carries 3 marks**

5 X3=15

1. Electronic Data Interchange (EDI)
2. Fed wire
3. E- Cash
4. Digital Signature
5. Online Payment
6. Payment Wallet
7. Electronic Statement Delivery
8. ATM

SECTION – B

Answer any ONE question from each unit.

Each question carries 12 marks

5X12 =60

Unit-1

2. Explain about E-Cash? What are the issues to arising in E-Cash system?

Or

3. Explain about different types of electronic payment modes?

Unit -2

4. Describe the process of real time gross settlement system?

Or

5. Write an essay on CHIPS and SWIFT?

Unit- 3

6. Explain the methods of cryptography?

Or

7. Explain the functions of digital signature?

Unit- 4

8. Write the importance of wireless payments system in nowadays?

Or

9. Explain digital wallets and its types?

Unit- 5

10. Describe the biller service providers?

Or

11. Explain about scan based trading?

CLUSTER ELECTIVE 1 A – E COMMERCE

DSC H 6.5 TALLY

Unit-I: Tally: Features of Tally accounting – Components of Gateway of Tally – Company creation – Creation of groups - Creation, display, and alteration of multiple and single ledgers – Various types of vouchers – Creation and alteration of vouchers – Configuration and print of financial statements and other reports, documents and vouchers.

Unit II: Tally Inventory - Configuration – Creation, display, and alteration of inventory masters – Recording various inventory vouchers – Display and print of inventory reports – Lab exercises.

Unit-III: GST: Enabling Tally for GST – Features and Classification of GST – Exemptions from GST – Exports and imports – Inter-state purchases and sales (IGST) – Lab exercises.

Unit-IV: TDS: Creation of ledgers and vouchers – Advance and balance payments of Tax – Generation of TDS reports – Enabling Service tax - Creation of ledgers and recording of vouchers – Lab exercises.

Unit-V: Payroll: Payroll features - Enabling payroll – Creation of Pay head ledgers – Creation of employee masters and pay roll voucher and attendance voucher – Display and print of various payroll reports - Lab exercises.

REFERENCE BOOKS: 1. Nadhani, A.K. and Nadhani, K.K. Implementing Tally 7.2 BPB Publication, New Delhi.

2. Kiran Kumar, K.Tally 9, Laasya Publishers, Hyderabad

3. Fire wall media, Tally 9.

4. Vishnu Priya Singh, tally 9, Computech Publications Ltd, New Delhi.

5. Sharma, KVS, Statistics mode simple, do it yourself and PC, Prentice Hall of India Pvt. Ltd., New Delhi

6. Goods and Services Tax, Himalaya Publishing House.

MODEL QUESTION PAPER
Third Year B.com - VI semester
TALLY

Time: 3hrs

Max Marks: 75

-
- I. Answer any **five** question from the following : 5X3=15
- | | |
|-----------------------------|-----------------------------------|
| a) Accruals | b) Accrual Accounting |
| c) Audit Trail | d) what is meant by balance sheet |
| e) Double-Entry Bookkeeping | f) explain the Payroll |
| g) COMPANY CREATION | h) voucher entry |
- II. Answer any **one** question for the **each unit** from the following: 5X12=60
- UNIT-I
1. Explain the company creation process in tally software? And write a note on company alteration and deletion in tally?
- (OR)
2. Explain the single and multiple Group creation process in tally software? How to create sub Groups?
- UNIT-II
3. Explain the inventory voucher creation and alteration process of inventory masters?
- (OR)
4. Explain the Display and print of inventory reporting process?
- (OR)
- UNIT-III
5. Write the GST Ledger creation process in tally?
- (OR)
6. Write the Features and Classification of GST in tally? Explain the Exemptions of GST?
- UNIT-IV
7. Explain the TDS ledger and voucher creation process in tally?
- (OR)
8. How to generate TDS reports in tally? And Explain enabling process of serves tax in tally?
- UNIT-V
9. Write the Payroll features? And Creation of Pay head ledgers?
- (OR)
10. Write the employee masters and payroll vouchers in tally?

B.COM. (CA.) DEGREE COURSE – III YEAR

SEMESTER – VI – PROJECT WORK

Marks: Project work–70+Viva-voce-30 marks

Objectives

1. To impart skills among the students to write a report of their choice in a given area / field.
2. To enable the students to develop necessary insights into the practical field by making use of functional knowledge of different areas attained in the previous years.

Internship

During the summer vacation, at the end of the second year, students have to undergo an internship for one month with companies and other Business organizations (including Chartered Accounting Firm).

The student should submit a brief report not exceeding 10 pages on learnings of internship and a certificate from the organization, along with the project work.

Project Work Guidelines

The students have to submit a Project report on a selected topic of their choice, selecting from the broad areas of their curriculum, guided by a Faculty member.

The students are expected to prepare a project report on a selected topic that should comprise of 50 to 80 pages. The project report is to be valued by the External Examiners suggested by the Board of Studies in Commerce. The project report is to be submitted at the college by 31st March of the year.

CLUSTER ELECTIVE 10 A – COMPUTER APPLICATIONS

DSC H 6.4 – E – COMMERCE APPLICATIONS

Unit-I: e-Commerce Frame work : Traditional vs. e-Business Applications – Anatomy of e-Commerce Applications – present day trends.

Unit-II: Net work Infrastructure of e-Commerce : Components of I-way – Global information distribution networks – Public policy issues – Internet as a network infrastructure – Business of the internet commercialization

Unit-III: Network Security : Client server network security – Firewalls and Network security – Data and message security – Encrypted documents and Electronic mail.

Unit-IV: Electronic Commerce and World Wide Web : Consumer oriented E- Commerce, Electronic Payments systems, Electronic Data Interchange (EDI) EDI applications in business EDI and E-Commerce EDI implementation

Unit-V: Intra-organisational e-Commerce : e-Commerce catalogs, Document Management and Digital libraries – Managing Supply Chain through e-Platform

Reference Books:

1. R. Kalakota and A.B. Whinston, Frontiers of Electronic Commerce, Addison Wesley
2. David Kosiur, Understanding Electronic Commerce, Microsoft Press
3. Soka, From EDI to Electronic Commerce, McGraw Hill.
4. Saily Chan, Electronic Commerce Management, John Wiley

B.Com (CA)/B.A/B.Sc (CA) DEGREE EXAMINATION

MODEL QUESTION PAPER

VI SEMESTER

PAPER: E- COMMERCE APPLICATIONS

Time:3 Hours

Max. Marks: 75

SECTION-A

1. Answer any FIVE questions, each question carries 3 marks

5 X3=15

- a. Define E-Commerce
- b. Electronic marketing
- c. Online payment
- d. Smart card
- e. Authentication
- f. Encryption
- g. WWW
- h. Networking
- i. Browsing
- j. Online meeting

SECTION –B

Answer one question from each unit. Each question carries 12 marks

(5x12=60)

UNIT-I

2.Explain merits and demerits of E-Commerce

(OR)

3.Explain different business models of E-Commerce

UNIT-II

4. explain the various components of I – way/

(Or)

5. What is internet explain the infrastructure of Inter net

UNIT-III

6.Explain the types of Encryption.

(OR)

7. Explain the functionality of firewall in detail.

UNIT-IV

8.What do you understand by online payment system

(OR)

9.What is meant by EDI? Explain uses and limitations of EDI

UNIT-V

10.Write about Supply Chain management.

(OR)

11.Explain digital and document management

CLUSTER ELECTIVE 1 A – E COMMERCE

DSC H 6.5 TALLY

Unit-I: Tally: Features of Tally accounting – Components of Gateway of Tally – Company creation – Creation of groups - Creation, display, and alteration of multiple and single ledgers – Various types of vouchers – Creation and alteration of vouchers – Configuration and print of financial statements and other reports, documents and vouchers.

Unit II: Tally Inventory - Configuration – Creation, display, and alteration of inventory masters – Recording various inventory vouchers – Display and print of inventory reports – Lab exercises.

Unit-III: GST: Enabling Tally for GST – Features and Classification of GST – Exemptions from GST – Exports and imports – Inter-state purchases and sales (IGST) – Lab exercises.

Unit-IV: TDS: Creation of ledgers and vouchers – Advance and balance payments of Tax – Generation of TDS reports – Enabling Service tax - Creation of ledgers and recording of vouchers – Lab exercises.

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4. Vishnu Priya Singh, tally 9, Computech Publications Ltd, New Delhi.

5. Sharma, KVS, Statistics made simple, do it yourself and PC, Prentice Hall of India Pvt. Ltd., New Delhi

6. Goods and Services Tax, Himalaya Publishing House.

Model Question paper
Third Year B.com - VI semester
TALLY

Time: 3hrs

Max Marks: 75

II. Answer any **five** question from the following : 5X3=15

- | | |
|-----------------------------|-----------------------------------|
| a) Accruals | b) Accrual Accounting |
| c) Audit Trail | d) what is meant by balance sheet |
| e) Double-Entry Bookkeeping | f) explain the Payroll |
| g) COMPANY CREATION | h) voucher entry |

II. Answer any **one** question for the **each unit** from the following: 5X12=60

UNIT-I

11. Explain the company creation process in tally software? And write a note on company alteration and deletion in tally?

(OR)

12. Explain the single and multiple Group creation process in tally software? How to create sub Groups?

UNIT-II

13. Explain the inventory voucher creation and alteration process of inventory masters?

(OR)

14. Explain the Display and print of inventory reporting process?

(OR)

UNIT-III

15. Write the GST Ledger creation process in tally?

(OR)

16. Write the Features and Classification of GST in tally? Explain the Exemptions of GST?

UNIT-IV

17. Explain the TDS ledger and voucher creation process in tally?

(OR)

18. How to generate TDS reports in tally? And Explain enabling process of serves tax in tally?

UNIT-V

19. Write the Payroll features? And Creation of Pay head ledgers?

(OR)

20. Write the employee masters and payroll vouchers in tally?

B.COM. (CA) DEGREE COURSE – III YEAR

SEMESTER – VI – PROJECT WORK

Marks: Project work–70+Viva-voce-30 marks

Objectives

1. To impart skills among the students to write a report of their choice in a given area / field.
2. To enable the students to develop necessary insights into the practical field by making use of functional knowledge of different areas attained in the previous years.

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Sri Venkateswara University : TIRUPATI

Table 6 : B. A (Accountancy)– Semester VI

W.E.F. 2017-18

DSC: Compulsory

ACCOUNTING FOR SPECIAL ENTITIES

Teaching Hours :6 per week

Unit – I : Partnership Accounts 1:

Partnership – introduction – Fixed and fluctuating capital methods – admission of a partner – new profit sharing ratio – revaluation of assets and liabilities – treatment of goodwill – treatment of undistributed profits and losses – (problems only)

Unit – II : Partnership Accounts 2:

Retirement of a partner – revaluation of assets and liabilities – goodwill treatment – undistributed profits – Death of a partner – Dissolution – firm and partnership (insolvent of one partner only) – (problems)

Unit – III : Instalment Purchase System:

Instalment purchase system – introduction and features – differences between hire purchase system and instalment purchase system – problems on Instalment purchase system only.

Unit – IV : Single Entry System:

Single entry system – introduction and limitations – ascertainment of profit – statement of affairs method – conversion method (simple problems only).

Unit – V : Branch Accounts:

Branch Accounts – introduction – types of branches – dependent branches – cost price method and invoice price method – debtors method – stock and debtors method only (problems on dependent branches only)

MODEL QUESTION PAPER
ACCOUNTING FOR SPECIAL ENTITIES

Section – A

Answer any FIVE of the following. Each question carries 3 marks

5 x 3 = 15

1. Fixed capital method.
2. Sacrificing ratio.
3. Retirement of a partner.
4. Joint life policy.
5. Features of instalment purchase system.
6. Statement of affairs
7. Differences between single entry system and double entry system.
8. Types of branches.

Section – B

Answer any ONE question from each unit.
Each question carries 12 marks

5X12 =60

Unit – I

9. On 1st January 2010 Arjun and Bhargav entered into a partnership on the following terms.
- a. Mr. Arjun and Mr. Bhargav are to contribute capitals of `50,000 and `30,000 respectively
 - b. Profits and losses are to be shared in the ratio of 3:2
 - c. Interest on capital is to be allowed at 5 percent per annum
 - d. Interest on drawings is to be charged at 2% pa
 - e. Mr. Arjun is to get a salary of `500 per month
 - f. Mr. Bhargav is to get commission at 2% on the net profit of the firm before charging any of the above

On 31st December 2010 their trading profits, before giving effect to the above terms, was `60,000. During the year Mr.Arjun has withdrawn `1,000 and Mr.Bhargav`500 from the firm on which interest is to be charged for the whole year.

Prepare profit and loss appropriation account and partners capital accounts

- a. Fixed capital method
- b. Fluctuating capital method

OR

10. The following is the balance sheet of Amar and Sunil who share profits and losses in the ration of 3/5 and 2/5

Liabilities	`	Assets	`
Adhitya's Capital	20,000	Debtors	20,000
Bhargav's capital	16,000	Buildings	18,000
Creditors	24,000	Plant	20,000
General reserve	32,000	Stock	24,000
Workmen compensation fund	8,000	Cash	18,000
	100,000		100,000

They agreed to admit Chandra on the following terms:-

- a. The value of buildings to be increased to `20,000
- b. The value of stock to be increased to `32,000
- c. There is a liability on workmen's compensation fund which was determined at `4,000
- d. Chandra contributes `20,000 in cash as his share of goodwill
- e. Chandra has to bring further cash as would make his capital equal to 20% of the combined capital to Adhitya and Bhargav after all adjustments.

Show the necessary ledger accounts in the books of firm and new balance sheet after the admission of Chandra.

Unit - II

11. A, B and C are partners in a business, sharing profits and losses in the ratio of 10:7:3.

Liabilities	`	Assets	`
Creditors	40,000	Fixed assets	1,00,000
Reserve fund	20,000	Stock	70,000
Capitals		Debtors 30,600	
A	80,000	Less: RBD 600	30,000
B	60,000	Cash at bank	20,000
C	20,000		
	2 20,000		2,20,000

C retires on that date subject to the following conditions:

- Fixed assets are to be depreciated by 20% except buildings worth `40,000 (book value) which is to be valued at `60,000
- `600 to be written off as bad debts and provision for doubtful debts to be done at 4%
- The goodwill of the firm to be valued at `32,000
- Liability for outstanding expenses `4,000 to be provided
- There were office equipment which were 100% depreciated to be valued at `8,000 on the date of retirement. It was to be brought into books.
- It was agreed that A and B will share profits equally in future.

Show necessary ledger accounts and balance sheet after C's retirement.

OR

12. Ravinder, Shekhar and Ramana are partners sharing 2:2:1 ratio. On 1-1-2010 their balance sheet was as under

Liabilities	`	Assets	`
Sundry creditors	18,000	Cash at bank	4,000
Reserve fund	20,000	Bill receivable	2,000
Capital A/cs		Debtors 20,000	
Ravinder	30,000	Less: Reserve 1,000	19,000
Shekhar	20,000	Stock	12,000
Ramana	2,000	Machinery	30,000
		Buildings	23,000
	90,000		90,000

On the above date the firm was dissolved. The assets realised machinery `15,000; buildings `8,000; stock `10,000; Bills receivable – Nil; debtors `8,000. `1,850 included in the creditors need not paid. There is an unrecorded liability of `850 which had to be paid. The expenses of dissolution amounted to `3,000. `1,000 could only be realised from the estate of Ramana on becoming insolvent. Give ledger accounts to be close the books of account. Apply Garner Vs Murray rule.

Unit – III

13. Sekhar transport purchased a truck on instalment purchase system from Arun Automobiles on 1-1-2014. The cash price was `1,21,850 and down payment `21,850. The balance was payable in 4 instalments of `25,000 each plus interest at 12% p.a. at the end of 2014, 2015, 2016 and 2017. Sekhar transport provides depreciation at 20% p.a. on written down value method.

Pass journal entries in the books of Sekhar Transport. Also show the accounts.

OR

14. Supraja purchased a machine on 1-1-2015 from Suraj on installment system for `36,100 to be paid as follows. On delivery `9,000 at the end of first `12,300, at the end of second year 9,300, at the end of third year `5,500. The vendor charges interest @ 10% p.a. Determine the cash price and write entries in the books of Supraja who charges depreciation at 5% p.a. on diminishing balance method. Prepare necessary accounts in the books of Suraj.

Unit – IV

15. Mr Aditya keeps his books on single entry system and supplies the following information.

Assets & Liabilities	1-4-2016 (`)	31-3- 2017(`)
Bank	30,000	40,000
Debtors	40,000	50,000
Stock	60,000	64,000
Investments	1,00,000	1,60,000
Creditors	34,000	40,000
Furniture	30,000	70,000
Bills payable	12,000	16,000
Loan from bank	---	30,000

Aditya has drawn `2,000 pm for domestic purpose and `12,000 from business funds to meet his son's education expenses. The rent paid to business premises is `2,400 and only, $\frac{1}{2}$ premises is used for business whereas the entire rent was paid from business funds. The furniture is depreciated at 20% pa and `4,000 are to be provided for doubtful debts. Prepare the relevant statements and show the profit or loss made by Aditya for the year ending 31-3-2017.

OR

16. Mr. Ragava did not keep his books of accounts under double entry system. From the following information available from his records, prepare profit and loss account for the year ended 31st March 2017 and a balance sheet as at that date. Depreciate equipment by 10%.

Summary of cash book

Dr		Cr	
Receipts	`	Payments	`
To Balance B/d	80,000	By Purchases	1,40,000
To Sales	4,00,000	By Payment to creditors	2,00,000
To Receipts from Debtors	3,00,000	By Sundry expenses	60,000
		By Cartage	20,000
		By Drawings	80,000
		By Balance C/d	2,80,000
	7,80,000		7,80,000

Other information

	31-3-2016	31-3-2017
	`	`
Debtors	90,000	1,20,000
Creditors	1,44,000	68,000
Stock of materials	1,00,000	1,60,000
Equipment	4,00,000	4,00,000
Furniture	30,000	30,000
Discount allowed during the year		14,000
Discount received during the year		17,000

Unit – V

17. A Head Office in Hyderabad has branch at Tirupati to which goods are invoiced by the Head Office at 20% on selling price. All cash received by the branch is daily remitted to Head Office. From the following particulars, show how the branch account will appear in the Head Office books.

Particulars	₹
Stock on January 1, 2016 (at invoice price)	1,00,000
Debtors on 1-1-2016	1,20,000
Goods supplied by Head Office (at invoice price)	3,20,000
Cash sales	50,000
Cash received from customers	2,20,000
Goods returned to Head Office at invoice price	20,000
Cheques received from Head Office	
Wages and Salaries	45,000
Rent	5,000
Sundry expenses	12,000
Stock on 31-12-2016 (at invoice price)	1,25,000
Debtors on 31-12-2016	1,40,000

OR

18. Virinchi Technologies of Hyderabad is having a Branch at Bangalore. The particulars relating to The Branch as on 31.12.2016 was as follows.

Stock at the Branch as on 1.1.2016	22,500
Debtors at the Branch as on 1.1.2016	45,000
Petty Cash at the Branch as on 1.1.2016	450
Goods sent to Branch during the Year	3,78,000
Credit Sales during the year	3,42,000

Remittances from the Branch

for cash sales 90,000

Received from Debtors 3,15,000 4,05,000

Cheques sent to the Branch during the year:

For salaries 13,500

For Rent & Taxes 2,300

For Petty Cash 1,700 17,500

Stock at Branch as on 31.12.2016 37,500

Goods Returned by the branch 3,000

Debtors as on 31.12.2016 72,000

Petty cash as on 31.12.2016 300

Show the Net Profit for the year 2016

Cluster Electives :

Accounting : teaching Hours 6 per week per subject

6.1 Auditing

6.2 Management Accounting

6.3 Project work

CLUSTER ELECTIVE – B.A, ACCOUNTING

AUDITING

Unit-I: Auditing: Meaning – Objectives – Errors and Frauds - Importance of Auditing – Auditing as a Vigil Mechanism – Role of Auditor in checking corporate frauds.

Unit-II: Types of Audit: Based on Ownership and time - Independent, Financial, Internal, Cost, Tax, Government, Secretarial audits.

Unit-III: Planning of Audit: Steps to be taken at the commencement of a new audit – Audit programme - Audit note book - Internal check, internal audit and internal control.

Unit-IV: Vouching and Investigation: Vouching of cash and trading transactions – Investigation, Auditing vs. Investigation

Unit-V: Company Audit and Auditors Report: Auditor's Qualifications – Appointment and Reappointment – Rights, duties, liabilities and disqualifications - Audit report: Contents.

References:

1. S.Vengadamani, “Practical Auditing”, Margham Publications, Chennai.
2. Ghatalia, “Principles of Auditing”, Allied Publishers Pvt. Ltd., New Delhi.
3. Pradeesh Kumar, Baldev Sachdeva & Jagwant Singh, “Auditing Theory and Practice, Kalyani Publications, Ludhiana.
4. N.D. Kapoor, “Auditing”, S. Chand, New Delhi.
5. R.G. Saxena, “Principles and Practice of Auditing”, Himalaya Publishing House, New Delhi.
6. Jagadesh Prakesh, “Principles and Practices of Auditing” Kalyani Publications, Ludhiana.
7. Kamal Gupta and Ashok Gupta, “Fundamentals of Auditing”, Tata McGraw Hill
8. B.N. Tondan, “Practical Auditing”, S.Chand, New Delhi.

Sri Venkateswara University
Model Paper
III B.A (Accountancy)
Semester – VI, W.E.F.2017-18
AUDITING

Time: 3 hours

Max.Marks: 75 M

Section – A

Answer any FIVE of the following. Each question carries 3 marks

5 x 3 = 15

- | | |
|--|---|
| 1. a) Auditing
c) Internal Audit
e) Audit Note Book
h) Vouching | b) Auditing as a Vigil Mechanism
d) Government Audit
g) Investigation
i) Auditors qualifications |
|--|---|

Section – B

Answer any ONE question from each unit.
Each question carries 12 marks

5X12 =60

UNIT-I

2. Define Auditing. Explain objectives of Auditing

(or)

3. Describe the importance of Auditing.

UNIT-II

4. Describe the various types of Audit.

(or)

5. Distinguish between Cost Audit and Financial Audit

UNIT-III

6. What steps should be taken in to A/c vehicle commencement of New Audit?

(or)

7. What are the contents of Audit programme?

UNIT-IV

8. “Vouching is the essence of Auditing”. Discuss?

(or)

9. Distinguish between Audit and Investigation?

UNIT-V

10. What are the Rights and duties of company Auditor?

(or)

11. What are the contents of Audit Report?

MANAGEMENT ACCOUNTING

Unit–I: Management Accounting: Interface with Financial Accounting and Cost Accounting – Scope and limitations of management accounting - Functions of Management Accounting and its importance (Theory only)

Unit–II: Financial statement analysis - Financial Statement analysis and interpretation Comparative statements – Common size analysis and trend analysis (including problems).

Unit–III: Ratio Analysis: Classification, Importance and limitations - Analysis and interpretation of Accounting ratios - Liquidity, profitability, turnover or activity and solvency ratios (including problems).

Unit–IV: Fund Flow Statement: Concept of fund: Preparation of funds flow statement. Uses and limitations of funds flow analysis (including problems).

Unit–V: Cash Flow Statement: Concept of cash flow – Preparation of cash flow statement - Uses and limitations of cash flow analysis (including problems).

References:

1. Cost Accounting and Management Accounting – T.S. Reddy and Hariprasad Reddy, Margham publications, Chennai
2. S.N. Maheswari, A Textbook of Accounting for Management, S. Chand Publishing, New Delhi
3. I.M Pandey, “Management Accounting”, Vikas Publishing House, New Delhi,
4. Shashi K. Gupta & R.K. Sharma, “Management Accounting: Principles and Practice”, Kalyani Publishers, Ludhiana.
5. Jawahar Lal, Accounting for Management, Himalaya Publishing House, New Delhi.
6. Charles T. Horngren, [et.al](#), “Introduction to Management Accounting” Person EducationIndia, New Delhi, 2002.
7. Murthy & Guruswamy – Management Accounting, Tata McGraw Hill, New Delhi.
8. Dr. Kulsreshtha & Gupta – Practical problems in Management Accounting.
9. Bhattacharya, D., “Management Accounting”, Pearson Education India, New Delhi.
10. S.P. Gupta – Management Accounting, S. Chand Publishing, New Delhi.

Sri Venkateswara University
Model Paper
III B.A (Accountancy)
Semester – VI, April, 2018
DSC 3G 6.3 – Management Accounting

Time: 3 hours

Max.Marks: 75 M

Section – A

Answer any FIVE questions, each question carries 3 marks

5 X3=15

- | | |
|---|---|
| 1. a) Management Accounting
c) Liquidity Ratios
e) Funds from operation
g) Cash flow statement
i) Common size statement | b) Financial Statements
d) Gross Profit Ratio
f) Operating Activities
h) Limitations of Ratio Analysis
j) Cost Accounting |
|---|---|

Section – B

Answer any ONE question from each unit.
Each question carries 12 marks

5X12 =60

UNIT-I

- 2. Explain scope and limitations of Management Accounting**

(or)

- 3. Explain the functions & importance of Management Accounting**

UNIT-II

- 4. Dhandapani & Co. Ltd., furnishes the following Balance Sheets for the years 2014 and 2015.**
Prepare common-size balance sheets.

Balance sheets

Liabilities	2014 Rs.	2015 Rs.	Assets	2014 Rs.	2015 Rs.
-------------	-------------	-------------	--------	-------------	-------------

Share capital	2,00,000	3,00,000	Buildings	4,00,000	4,00,000
Reserves	6,00,000	7,00,000	Machinery	6,00,000	10,00,000
10% Debentures	2,00,000	3,00,000	Stock	2,00,000	3,00,000
Creditors	3,00,000	5,00,000	Debtors	2,00,000	2,50,000
Bills payable	1,00,000	80,000	Cash at Bank	1,00,000	50,000
Tax payable	1,00,000	1,20,000			
	<hr/>	<hr/>		<hr/>	<hr/>
	15,00,000	20,00,000		15,00,000	20,00,000

(or)

5. The following are the extracts from the income statements of Bright Ltd., for the 6 years ending 2015. You are required to calculate trend percentages, taking 2014 as the base year and give two major conclusions you can draw.

(figures in thousands)

Particulars	2012	2013	2014	2015	2016	2017
Sales	300	340	420	480	520	600
Cost of goods sold	180	204	256	287	300	330
Office Expenses	40	42	45	50	55	60
Selling expenses	20	25	30	40	50	60
Net profit/loss	60	69	89	103	115	150

UNIT-III

6. The following figures relate to the trading activities of a company for the year ended 31-03-2016.

Particulars	Rs.	Particulars	Rs.
Sales	1,00,000	Salary of salesmen	1,800
Purchases	70,000	Advertising	700
Closing stock	14,000	Travelling expenses	500
Sales returns	4,000	Salaries (office)	3,000
Dividend received	1,200	Rent	6,000
Profit on sale of fixed assets	600	Stationery	200
Loss on sale of shares	300	Depreciation	1,000
Opening stock	11,000	Other expenses	2,000
		Provision for tax	7,000

You are required to calculate

1. Gross profit ratio
2. Operating profit ratio
3. Operating ratio
4. Net profit ratio

(or)

7. The following figures are extracted from the Balance Sheet of X Ltd., as on 31st December:

	2012 Rs.	2013 Rs.
Stock	25,000	40,000
Debtors	10,000	16,000
Cash at Bank	5,000	4,000
Creditors	8,000	15,000
Bills payable	2,000	3,000
Provision for Taxes	5,000	7,000
Bank Overdraft	5,000	15,000

Calculate the Current Ratio and Quick Ratio for the two years.

UNIT-IV

8. Prepare a schedule of changes in working capital from the following Balance Sheets:

Balance Sheets

Liabilities	2014 Rs.	2015 Rs.	Assets	2014 Rs.	2015 Rs.
Share capital	50,000	50,000	Fixed assets	18,000	28,000
10% Debentures	10,000	20,000	Investments:		
Bills payable	18,000	6,000	Non-trading	10,000	10,000
Outstanding expenses	6,000	9,000	Trading	8,000	9,000
Trade Creditors	33,000	40,000	Inventories	12,000	18,000
			Trade Debtors	40,000	48,000
			Accrued interest	4,000	6,000
			Unexpired insurance	-	3,000
			Cash at bank	17,000	2,000
			Cash in hand	8,000	1,000
	<hr/>	<hr/>		<hr/>	<hr/>
	1,17,000	1,25,000		1,17,000	1,25,000

(or)

9. The following are the summarised Balance Sheets of Malar Industries Ltd., as on 31st December 2009 and 2010:

Balance Sheet					
Liabilities	2009 Rs.	2010 Rs.	Assets	2009 Rs.	2010 Rs.
<i>Capital:</i>			Fixed Assets	41,000	40,000
7% Redeemable preference shares	-	10,000	<i>Less: Depreciation</i>	<u>11,000</u>	<u>15,000</u>
Equity shares	40,000	40,000		30,000	
General reserve	2,000	2,000	<i>Current assets:</i>		
Profit & Loss A/c	1,000	1,200	Debtors	20,000	24,000
Debentures	6,000	7,000	Stock	30,000	35,000
<i>Current Liabilities:</i>			Prepaid expenses	300	500
Creditors	12,000	11,000	Cash	1,200	3,500
Provision for tax	3,000	4,200			
Proposed dividend	5,000	5,800			
Bank overdraft	12,500	6,800			
	<u>81,500</u>	<u>88,000</u>		<u>81,500</u>	<u>88,000</u>

Prepare: i) Statement showing changes in the working capital.
ii) A statement of sources and applications of funds.

UNIT-V

10. From the following data you are required to calculate the cash from operations:
funds from operations for the year 1998 Rs.84,000. Current assets and liabilities as on 1-4-08 and 31-03-09 were as follows:

	1-4-08 Rs.	31-03-09 Rs.
Trade creditors	1,82,000	1,94,000
Trade debtors	2,75,000	3,15,000
Bills receivable	40,000	35,000
Bills payable	27,000	31,000
Inventories	1,85,000	1,70,000
Trade investments	40,000	70,000
Outstanding expenses	20,000	25,000
Prepaid expenses	5,000	8,000

(or)

11. From the following Balance Sheets as on 31-03-15 and 31-03-14, prepare a Cash Flow Statement:

Liabilities	31.03.2015 Rs.	1.04.2014 Rs.	Assets	31.03.2015 Rs.	1.04.2014 Rs.
Share capital	1,50,000	1,00,000	Fixed assets	1,50,000	1,00,000
Profit & Loss A/c	80,000	50,000	Goodwill	40,000	50,000
General reserve	40,000	30,000	Stock	80,000	30,000
6% Debentures	60,000	50,000	Debtors	80,000	50,000
Creditors	40,000	30,000	Bills Receivable	20,000	30,000
Outstanding exp.	15,000	10,000	Bank	15,000	10,000
	<hr/>	<hr/>		<hr/>	<hr/>
	3,85,000	2,70,000		3,85,000	2,70,000

SEMESTER – VI – PROJECT WORK

Marks: Project work–70+Viva-voce-30 marks

Objectives

1. To impart skills among the students to write a report of their choice in a given area / field.
2. To enable the students to develop necessary insights into the practical field by making use of functional knowledge of different areas attained in the previous years.

Internship

During the summer vacation, at the end of the second year, students have to undergo an internship for one month with companies and other Business organizations (including Chartered Accounting Firm).

The student should submit a brief report not exceeding 10 pages on learnings of internship and a certificate from the organization, along with the project work.

Project Work Guidelines

The students have to submit a Project report on a selected topic of their choice, selecting from the broad areas of their curriculum, guided by a Faculty member.

The students are expected to prepare a project report on a selected topic that should comprise of 50 to 80 pages. The project report is to be valued by the External Examiners suggested by the Board of Studies in Commerce. The project report is to be submitted at the college by 31st March of the year.

III B. Sc - BOTANY SYLLABUS SEMESTER- VI
PAPER – VII – ELECTIVE
W.E.F. 2017-18

Paper VII-(B): Nursery, Gardening and Floriculture.

Total hours of teaching 60hrs @ 3hrs per week

Unit I: Nursery: (12 hrs.)

1. Definition, objectives, scope and building up of infrastructure for nursery.
2. Planning and seasonal activities - Planting - direct seeding and transplants.
3. Nursery Management and Routine Garden Operations.

Unit III: Gardening (12 hrs.)

1. Definition, objectives and scope - different types of gardening.
2. Landscape and home gardening - parks and its components, plant materials and design .
3. Computer applications in landscaping.
4. Gardening operations: soil laying, manuring, watering.
5. Landscaping Places of Public Importance: Landscaping highways and Educational Institutions)
6. Some Famous gardens of India.

Unit III: Propagation methods (12 hrs.)

- 1 Sowing/raising of seeds and seedlings, transplanting of seedlings.
2. Air-layering, cutting, selection of cutting ,propagule collecting season, treatment of cutting rooting medium and planting of cuttings - Hardening of plants.
3. Propagation of ornamental plants by rhizomes, corms tubers, bulbs and bulbils.
4. Green house - mist chamber, shed root, shade house and glass house for propagation.

Unit IV: Floriculture: (12 hrs.)

1. Ornamental Plants: Flowering annuals; herbaceous, perennials; Divine vines; Shade and ornamental trees.
2. Ornamental bulbous and foliage plants; Cacti and succulents.
3. Ornamentals-palms.
4. Cultivation of plants in pots; Indoor gardening; Bonsai.

Unit V: Commercial Floriculture**(12 hrs.)**

1. Factors affecting flower production; Production and packaging of cut flowers; Flower arrangements; Methods to prolong vase life of flowers
2. Cultivation of Important cut flowers (Carnation, Aster, Dahlia, Gerbera, Anthuriums, Gladiolous, Marigold, Rose, Lilium)
3. Management of pests, diseases and harvesting.
4. Methods of harvesting.

Books for Reference:

1. Bose T.K. & Mukherjee, D., 1972, Gardening in India, Oxford & IBH Publishing Co., New Delhi.
2. Sandhu, M.K., 1989, Plant Propagation, Wile Eastern Ltd., Bangalore, Madras.
3. Kumar, N., 1997, Introduction to Horticulture, Rajalakshmi Publications, Nagercoil. institution)
4. Randhawa, G.S. and Mukhopadhyay, A. 1986. Floriculture in India. Allied Publishers.

Suggested Activities: Raising a nursery, managing it, studying and drawing various land scaping designs, practicing layering methods, using shade nets to protect horticultural crops, practicing indoor gardening techniques, visiting florists and recording their methods of prolonging vase life of commercial cut flowers.

III B. Sc - BOTANY SYLLABUS SEMESTER- VI (Elective)
Practical Syllabus, Paper VII-(B): Nursery, Gardening and Floriculture
 Total hours of teaching 30hrs @ 2hrs per week

1. Tools, implements and containers used for propagation and nursery techniques.
2. Propagation by cutting, layering, budding and grafting
3. Seed propagation- preparation of portable trays, seed treatments, sowing and seedling production.
4. Identification and description of annuals, herbaceous perennials, climbers, creepers, foliage and flowering shrubs, trees, palms, ferns, ornamental grasses; cacti and succulents..
5. Planning and designing of gardens, functional uses of plants in the landscape
6. Preparation of land for lawn and planting.
7. Identification of commercially important flower crops and their varieties.
8. Propagation practices in flower crops, sowing of seeds and raising of seedlings of annuals.
9. Use of chemicals and other compounds for prolonging the vase life of cut flowers.
10. Grading, packing and marketing of cut flowers.
11. Visit to commercial nurseries and commercial tissue culture laboratory
12. Study project under supervision of lecturer – nursery/ornamental flowers/ plants/lawn designing/ landscape designing

Expected domain skills to be achieved: Ability to use a variety of garden tools and implements, proficiency in layering and grafting techniques (cleft grafting and bud grafting), land scape drawings using computers, raising of healthy nurseries of flowering plants, managing vase life of cut flowers etc.

PRACTICAL MODEL PAPER

Paper-VII-(B): Nursery, Gardening and Floriculture

Q1. Project report (A)	- 15 marks
Viva-voce on study project	-05 marks
Q2. Identify and write notes on B, C, D, and E (4x5)	-20 marks
B- Tool/instrument/container used in nursery	
C-Seed propagation technique	
D- Plant used in lawn (plant specimen/photograph)	
E-ornamental flower (photograph/live specimen)	
Q4. Field report	- 05 marks
Q5. Record	- 05 marks
	50 marks

III B.Sc.: BOTANY SYLLABUS SEMESTER- VI

Paper VIII, CLUSTER ELECTIVE

W.E.F. 2017-18

Paper VIII-A-1 : PLANT DIVERSITY AND HUMAN WELFARE

Total hours of teaching 60hrs @ 3hrs per week

Unit- I: Plant diversity and its scope: (12hrs)

- i. Genetic diversity, Species diversity, Plant diversity at the ecosystem level, Agro biodiversity and cultivated plant taxa, wild taxa.
- ii. Values and uses of biodiversity: Ethical and aesthetic values,
- iii. Methodologies for valuation, Uses of plants.

Unit -II: Loss of biodiversity: (12hrs)

- i. Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agro biodiversity, projected scenario for biodiversity loss
- ii. Management of plant biodiversity: Organizations associated with biodiversity management-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations, Biodiversity information management and communication.

Unit-III: Contemporary practices in resource management: (12hrs)

- i. Environmental Impact Assessment (EIA), Geographical Information System GIS, Participatory resource appraisal, Ecological footprint with emphasis on carbon footprint, Resource accounting;
- ii. Solid and liquid waste management

Unit -IV: Conservation of biodiversity (12hrs)

- i. Conservation of genetic diversity, species diversity and ecosystem diversity, *In situ* and *ex situ* conservation,
- ii. Social approaches to conservation, Biodiversity awareness programmes, Sustainable development.

Unit- V: Role of plants in relation to Human Welfare (12hrs)

- i. Importance of forestry, their utilization and commercial aspects-
 - a) Avenue trees, b) ornamental plants of India. c) Alcoholic beverages through ages.
- ii. Fruits and nuts: Important fruit crops their commercial importance. Wood, fiber and their uses.

Suggested Readings:

1. Krishnamurthy, K.V. (2004). An Advanced Text Book of Biodiversity - Principles and Practices. Oxford and IBH Publications Co. Pvt. Ltd. New Delhi.
2. Singh, J. S., Singh, S.P. and Gupta, S. (2006). Ecology, Environment and Resource Conservation. Anamaya Publications, New Delhi.
3. Rogers, P.P., Jalal, K.F. and Boyd, J.A. (2008). An Introduction to Sustainable Development. Prentice Hall of India Private Limited, New Delhi.

Suggested activities: Study of flora and its diversity in the college campus or local area, enumerating wild and exotic species (*Parthenium*, Water hyacinth etc.)

Project work on any one of the International organizations striving for preservation of biodiversity, study of conservation efforts of local people, and civic bodies, study of locally available fruits in different seasons, enumerating the avenue plantations and their diversity in your town/city

Paper – VIII-A-1 : Practicals: PLANT DIVERSITY AND HUMAN WELFARE

- 1) Study of plant diversity (flowering plants).
- 2) Study of exotic species- Identification and morphological characteristics.
- 3) Identification of forest trees through bark, wood, flowers, leaves and fruits.
- 4) Maceration, Study of wood (Tracheary elements, fibres).
- 5) Methods of preservation and canning of fruits.
- 6) Visit to the local ecosystem to study the plants.
- 7) Write up on the conservation efforts of International organizations.
- 8) Study of Solid and Liquid waste management systems in rural/urban areas.

Domain skills expected to achieve: Identification of exotic plant species, identification of forest trees based on the characteristics of bark, flowers and fruits, understanding the preservation methods of fresh and dry fruits, understanding the methods of safe disposal of biodegradable and non-biodegradable wastes

SCHEME OF PRACTICAL EXAMINATION

PRACTICAL- VIII-A-1 : Cluster Elective (MODEL QUESTION PAPER) PLANT DIVERSITY AND HUMAN WELFARE

Time: 3hrs

Max. Marks: 50

I. Assign the plants **A, B and C** to their respective families, giving reasons, family name and classification-2 marks, important diagrams- 3 marks.

15 marks

II. Give the protocol of **D** **10 marks**

III. Comment on specimens **E, F and G** **3x3 = 9 marks**

IV. Report on Field visit **6 marks**
To study sources of firewood (10 plants), timber-yielding trees (10trees) and bamboos.

V. Viva-Voce **5 marks**

VI. Practical Record **5 marks**

KEY

A-Cultivated Plant

B- Wild Plant

C –Exotic plant

D- Preservation and canning of fruits, solid and liquid waste management systems in rural/urban areas

E. Bark/wood/fruit yielding plant

F. Nuts/ Alcoholic beverage plant

G. wood /Fibre yielding plant

III B. Sc - BOTANY SYLLABUS

SEMESTER- VIII : CLUSTER ELECTIVE -A

Paper VIII-A-2 : ETHNOBOTANY AND MEDICINAL BOTANY

Total hours of teaching 60hrs @ 3hrs per week

Unit –I: Ethnobotany (12hrs)

- i. Introduction, concept, scope and objectives; Ethnobotany as an interdisciplinary science. The relevance of ethnobotany in the present context
- ii. Major and minor ethnic groups or Tribals of India, and their life styles.
- iii. Plants used by the tribal populations: a) Food plants, b) intoxicants and beverages, c) Resins and oils and miscellaneous uses.

Unit -II: Role of ethnobotany in modern Medicine: (12hrs)

- i. Role of ethnobotany in modern medicine with special example *Rauvolfia sepentina*, *Trichopus zeylanicus*, *Artemisia annua*, *Withania somnifera*.
- ii. Medico-ethnobotanical sources in India
- iii. Significance of the following plants in ethno botanical practices (along with their habitat and morphology)
 - a) *Azadirachta indica*, b) *Ocimum sanctum*, c) *Vitex negundo*, d) *Gloriosa superba*, e) *Tribulus terrestris*, f) *Phyllanthus niruri*, g) *Cassia auriculata*, h) *Indigofera tinctoria*, i) *Senna auriculata* j). *Curcuma longa*.
- iv. Role of ethnic groups in the conservation of plant genetic resources.

Unit-III: Ethnobotany as a tool to protect interests of ethnic groups (12hrs)

- i. Sharing of wealth concept with few examples from India.
- ii. Biopiracy, Intellectual Property Rights and Traditional Knowledge.

Unit -IV: History, Scope and Importance of Medicinal Plants.

indigenous Medicinal Sciences (12hrs)

- i. Definition and Scope-**Ayurveda**: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments.
- ii. **Siddha**: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine.
- iii. **Unani**: History, concept: Umoor-e- tabiya, tumors treatments/therapy, polyherbal formulations (in brief).

Unit -V: Conservation of endangered and endemic medicinal plants: (12hrs)

- i. Definition: endemic and endangered medicinal plants,
- ii. Red list criteria
- iii. *In situ* conservation: Biosphere reserves, sacred groves, National Parks
- iv. *Ex situ* conservation: Botanical Gardens.

Suggested Activities: Studying plant utilization methods by tribal/rural/migrant populations for their beverages, food, medicinal and uses, seminars on role of ethnic groups in conservation of plant genetic resources, project work on traditional knowledge about plant medicines, study of indigenous medicinal sciences and their efficacy.

Suggested Readings:

- 1) S.K. Jain, Manual of Ethnobotany, Scientific Publishers, Jodhpur, 1995.
- 2) Glimpses of Indian. Ethnobotny, Oxford and I B H, New Delhi – 1981.
- 3) S.K. Jain (ed.) 1989. Methods and approaches in ethnobotany. Society of ethnobotanists, Lucknow, India.
- 4) S.K. Jain, 1990. Contributions of Indian ethnobotny. Scientific publishers, Jodhpur.
- 5) Colton C.M. 1997. Ethnobotany – Principles and applications. John Wiley and sons – Chichester
- 6) Rama Ro, N and A.N. Henry (1996). The Ethnobotany of Eastern Ghats in Andhra Pradesh, India. Botanical Survey of India. Howrah.
7. Trivedi P C, 2006. Medicinal Plants: Ethnobotanical Approach, Agrobios, India.
8. Purohit and Vyas, 2008. Medicinal Plant Cultivation: A Scientific Approach, 2nd edn. Agrobios, India.
9. Pal, D.C. & Jain, S.K., 1998. Tribal Medicine. Naya Prakash Publishers, Calcutta
10. Raychudhuri, S.P., 1991. (Ed.) Recent advances in Medicinal aromatic and spice crops. Vol.1, Today& Tomorrow's printers and publishers, New Delhi

Cluster Elective VIII-A-2: Practical:**ETHNOBOTANY AND MEDICINAL BOTANY**

1. Ethnobotanical specimens as prescribed in theory syllabus
2. Detailed morphological and anatomical study of medicinally important part(s) of locally available plants (Minimum 8 plants) used in traditional medicine.
3. Field visits to identify and collect ethno medicinal plants used by local tribes/folklore.

Domain skills expected to achieve: Identification of various plant parts used as medicines by ethnic groups, understanding the difference between ancient wisdom and modern system of medicine, traditional medicine at the rescue of curing drug resistant maladies like malaria and viral diseases, understanding the role of spices in Indian kitchens, their therapeutic role

PRACTICAL- VIII-A-2 Cluster Elective: MODEL QUESTION PAPER

Paper VIII-A-2: ETHNOBOTANY AND MEDICINAL BOTANY

Time: 3 Hours

Max. Marks- 50

I. Identify the specimen A- Give reasons (morphological and anatomical) and draw labeled sketches 15marks

II. Identify and write about the medicinal uses of B-and C- 2x5= 10 marks.

III. Comment on D and E. 2x 4=8 marks

IV. Report on Field visit: 7 marks

List to be prepared mentioning special features of plants used by tribal populations as Medicinal Plants & Spices. Write their botanical and common names, parts used and diseases/disorders for which they are prescribed.

V. Viva-voce 5 marks

VI. Record 5 marks

Total = 50 marks

KEY

A-Plants given in unit II (i)

B-Plants used in Ayurvedic preparations (Amla in Chyavanprash, Senna in Laxatives)

C - - Do -

D. Photographs of National parks, Biosphere reserves and Botanical gardens.

E. Photograph of famous personalities in Ayurveda/Siddha medicine.

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III B. Sc - BOTANY SYLLABUS SEMESTER- VIII
CLUSTER ELECTIVE, Paper VIII-A-3

Paper VIII-A-3: Pharmacognosy and Phytochemistry

Total hours of teaching 60hrs @ 3hrs per week

Unit-I: Pharmacognosy (12hrs)

Definition, Importance, Classification of drugs - Chemical and Pharmacological, Drug evaluation methods

Unit –II: Organoleptic and microscopic studies: (12hrs)

Organoleptic and microscopic studies with reference to nature of active principles and common adulterants of *Alstonia scholaris* (bark), *Adhatoda vasica* (leaf), *Strychnos nuxvomica* (seed), *Rauwolfia serpentina* (root) and *Zinziber officinalis* *Catharanthus roseus*.

Unit-III: Secondary Metabolites: (12hrs)

- i. Definition of primary and secondary metabolites and their differences, major types - terpenes, phenolics, alkaloids, terpenoids, steroids.
- ii. A brief idea about extraction of alkaloids. Origin of secondary metabolites – detailed account of acetate pathway, mevalonate pathway, shikimate pathway.

UNIT-IV: Phytochemistry: (12hrs)

Biosynthesis and sources of drugs:

- (i) Phenols and phenolic glycosides : structural types, biosynthesis, importance of simple phenolic compounds, tannins, anthraquinones, coumarins and furanocoumarins, flavones and related flavonoid glycosides, anthocyanins, betacyanins, stilbenes, lignins and lignans).
- (ii) Steroids, sterols, saponins, withanolides, ecdysones, cucurbitacins:
Biosynthesis, commercial importance.
- (iii) Alkaloids: Different groups, biosynthesis, bioactivity.
- (v) Volatile oils, aromatherapy.

UNIT-V: Enzymes, proteins and amino acids as drugs: (12hrs)

- i. Vaccines, toxins and toxoids, antitoxins, immune globulins, antiserums,
- ii. Vitamins, Antibiotics – chemical nature, mode of action.
- iii. Pharmacological action of plant drugs – tumor inhibitors, PAF antagonists, antioxidants, phytoestrogens and others.
- iv. Role of different enzyme inhibitors.

Suggested Activities: Isolation techniques of active principles from various parts of popular medicinal plants, debates on the efficacy of plant medicines and palliative cure, volatile oils from plants-extraction methods, project work on crude drugs

BOOKS FOR REFERENCE:

1. Wallis, T. E. 1946. Text book of Pharmacognosy, J & A Churchill Ltd. 2. Roseline, A. 2011. Pharmacognosy. MJP Publishers, Chennai.
2. Gurdeep Chatwal, 1980. Organic chemistry of natural products. Vol.I.Himalaya Publishing house.
3. Kalsi, P. S. and Jagtap, S., 2012. Pharmaceutical medicinal and natural product chemistry N.K. Mehra . Narosa Publishing House Pvt. Ltd. New Delhi.
4. Agarwal, O. P. 2002. Organic chemistry–Chemistry of organic natural products. Vol. II. Goel publishing house , Meerut.
5. Harborne, J. B. 1998. Phytochemical methods –a guide to modern techniques of plant analysis 3 rd edition, Chapman and Hall
6. Datta & Mukerji, 1952. Pharmacognosy of Indian roots of Rhizome drugs. Bulletin No.1 Ministry of Health, Govt. of India.

VIII-A-3: Pharmacognosy and Phytochemistry: PRACTICALS

1. Physical and chemical tests for evaluation of unorganized drugs- Asaphoetida. Honey, Castor oil. Acacia
2. Identification of bark drugs – cinchona, cinnamom
3. Identification of fruit drugs – Cardamom, Coriander
4. Identification of root and rhizome drugs- Ginger, Garlic, Turmeric
5. Identification of whole plant – Aloes, Vinca, Punarnava
6. Herbarium of medicinal plants (minimum of 20 platns)
7. Collection of locally available crude drugs from local venders (minimum of 20)

Domain skills expected to achieve: Identification of various plant parts used as medicines, extraction of active principles from them, isolation by chromatographic techniques, learning callus culture techniques for secondary metabolite enrichment and understanding ethno-pharmacological principles

PRACTICAL: VIII-A-3 Cluster Elective: MODEL QUESTION PAPER
Pharmacognosy and Phytochemistry

Time: 3hrs.

Max. Marks=50

- | | |
|--|---------------------|
| I. Identify the given crude drugs A& B by morphological study and chemical tests. | 10 marks |
| II. Perform suitable chemical test and identify the given phytochemical C | 10 marks |
| III. Comment on D and E | 2x5=10 marks |
| IV. Herbarium and submission of drugs | 10 marks |
| IV. Viva-Voce | 5 marks |
| V. Practical Record | 5 marks |

Total	=	50 marks

KEY

A-Flower/fruit drugs

B-Rhizome/whole plant drugs

C- Tannins/ phenolics/steroids/ isoprenoids /Asaphoetida/ Honey/ Castor oil/ Acacia

D. Column Chromatography/ Gas Chromatogram/HPLC (photograph/ instrument used for chemical analysis of drugs

E. photograph/instrument used for tissue culture

III. B.Sc – Botany, Semester – VI
Paper – VII – Elective (B) – Nursery Gardening and Floriculture
Theory model Question Paper.

Time: 3hrs

Max Marks: 75

Section – A (short answer questions)

సెక్షన్-A లాఘు సమాధాన ప్రశ్నలు

Answer any five of the following questions

5x5 = 25

ఏదైనా ఐదు ప్రశ్నలకు జవాబులు వ్రాయుము

1. Planting. : మొక్కలను నాటే పద్ధతి.
2. Computer applications in land scaping. : లాండ్ స్కేపింగ్ కు కంప్యూటర్ అప్లికేషన్స్
3. Green House. : హరిత గృహము.
4. Ornamental trees. : అలంకరణా వృక్షాలు
5. Factors affecting flower production. : పుష్పాల ఉత్పత్తికి వాహకం కావు కారకాలు
6. Air – layering. : గాలిలో ఉంచు తాత్కాలికం
7. Perennials. : బహు వార్షికాలు
8. Packing of cut flowers. : కట్ ఫ్లవర్స్ (పుష్పాలు) ప్యాకింగ్

Section – B (Essay Questions)

సెక్షన్-B వ్యాసహిత ప్రశ్నలు

Answer all of the following questions

5x10=50

అన్ని ప్రశ్నలకు సమాధానములు వ్రాయుము

9 a.) Discuss about objectives and building up of infrastructure for nursery.

నాగు మడి ఉద్దేశ్యాలు నిర్మాణా విధానమును చర్చించండి.

(Or)

b.) Write an essay on Nursery management and Routine Garden operations.

నర్సరీ నిర్వాహణ మరియు సాధారణ తోట పనులపై వ్యాసము వ్రాయండి.

10. a.) Enumerate and discuss about different types of gardening.

వివిధ రకాల ఆటల పెంక పద్ధతులను వివరించండి.

(Or)

b.) Explain gardening operations.

ఆటల పెంక విధి నమూనూ గుర్తు వివరించండి

11. a.) Explain Raising of seeds and seedling and transplanting of seedlings.

నాణ్యత విధానము, నాణ్యత పొలాలలో ప్రవేశపెట్టే పద్ధతిని వివరించండి.

(Or)

b.) Discuss about propagation of ornament plants.

అలంకరణ మొక్కల వ్యాప్తిని గుర్తు చేయండి

12. a.) Write an essay on ornamental bulbous and foliage plants.

అలంకరణ ముంప మొక్కలు మరియు అండ్ మైన పత్రాల నిర్మాణ మొక్కలపై వ్యాసములు రాసండి.

(Or)

b.) Discuss about cultivation of plants in pots.

కుండలలో మొక్కలను పెంచే విధానమును గుర్తు చేయండి.

13. a.) Discuss about management of pests and diseases.

మొక్కలపై కీటక మరియు వ్యాధుల నివారణ పద్ధతులను గుర్తు చేయండి.

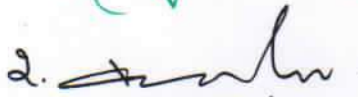
(Or)

b.) Write an essay on methods of harvesting.

ఫలపండ్ల మరియు పొండ్ల విధానము గుర్తు వ్యాసము రాసండి.

1. Dr. K. SUJATHA.

K. Sujatha B.O.S. chairperson.

2.  B.O.S. Member.

G. GOVINDARAJULU

III B.sc – Botany, Semester – VI

Paper – VIII – Cluster elective, Cluster – A

Paper – VIII A – I, Plant diversity and Human welfare

Theory model Question paper

Time: 3hrs

Max Marks: 75

Section – A (short answer questions)

సెక్షన్ - A లకు దీని ప్రశ్నలు

Answer any five of the following questions

5x5=25

ఏదైనా ఐదు ప్రశ్నలకు జవాబులు రావాలి

1. Uses of plants. : ముఖ్యం ప్రయోజనాలు
2. NBPGR. : ఎన్. బి. పి. జి. ఐ. రి.
3. Biodiversity Conservation. : జీవ వైవిధ్య సంరక్షణ.
4. Resource accounting. : వనరుల మూల్యాంకన
5. Social approaches to conservation. : సామాజిక అభివృద్ధి - సంరక్షణ.
6. Geographical information system. : భౌగోళిక డేటా సమాచార వ్యవస్థ
7. Wild taxa. : వన్య జాతులు
8. Avenue trees. : రహదారి వృక్షాలు

Section – B (Essay Questions)

సెక్షన్. బి. (ఎసే ప్రశ్నలు)

Answer all of the following questions

5x10=50

ఈ క్రింది ప్రశ్నలన్నింటికీ సమాధానాలు రావాలి.

9. a) Write about species diversity and Agro biodiversity.

జాతి వైవిధ్యము మరియు సాగ్రో బయోదైవతము గుర్తింపండి.

(Or)

- b) Discuss about values and uses of biodiversity.

జీవ వైవిధ్య యొక్క విలువలు మరియు ఉపయోగాలు చర్చించండి.

10. a) Explain loss of genetic diversity and ecosystem diversity.

జన్యు వైవిధ్య, పర్యావరణ వైవిధ్య పై విస్తృతముగా వివరించండి.
(Or) కాక

b.) write an essay on biodiversity information management and communication.

జీవ వైవిధ్య సమాచార నిర్వాహణ మరియు ప్రచారముపై వ్రాయండి.

11. a) Discuss about environmental impact assessment.

వాతావరణ ప్రభావమును గురించి చర్చించండి.

(Or)

b.) write about solid and liquid waste management.

ఘన, ద్రవ వ్యర్థ పరిశోధన మరియు నిర్వహణను గురించి వ్రాయండి.

12. a.) write an essay on *in situ* and *ex situ* conservation.

స్థానిక మరియు పరిరక్షణను గురించి వ్రాయండి.

(Or)

b.) write about biodiversity awareness programmes and sustainable development

జీవవైవిధ్య అవగాహన ప్రక్రియ మరియు సుస్థిరమైన అభివృద్ధిపై వ్రాయండి.

13. a.) Discuss about importance and utilization of forestry.

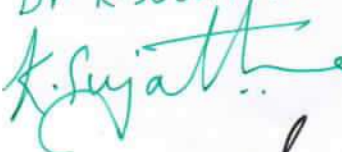
అడవి సంపద ప్రాముఖ్యత మరియు ఉపయోగమును గురించి వ్రాయండి.


(Or)

b.) write an essay on important fruit crops and their commercial importance.

ఫలాల నిర్మాణ పంటల మరియు వాణిజ్య ప్రాముఖ్యతను గురించి వ్రాయండి.

Dr. K. SUJATHA

1.  B.O.S chairperson.

2.  C.D. GOVINDANA IYER B.O.C. member

BOTANY
MODEL THEORY QUESTION PAPER
III B.Sc., SEMESTER - VI

PAPER VIII A - 2: ETHNOBOTANY AND MEDICINAL BOTANY

Time : 3 Hrs.

Max. Marks: 75 Marks

Section - A సెక్షన్-A

5x5=25 Marks

Answer any five of the following.

నివ్వనా ఐదు ప్రశ్నలకు జవాబులు అవ్వాలి.
Draw neat and labelled diagrams where ever necessary.

అవసరమైన చిత్ర పటముల గీయండి.

1. Concept and scope of Ethnobotany : ఎథనోబాటనీ పరిచయము.
2. Intoxicant plants : మత్తుకలిగించు మొక్కలు
3. *Rauvolfia serpentina* : రాల్ఫ్ ల్ఫియా సర్పెంటినా.
4. *Curcuma longa* : కుర్క్ యు లాంగ
5. Bio piracy : జీవ - హక్ దోచు
6. Umor - e - tabiya : ఉమూర్ - ఇ - తబియా
7. Tridosha Concept : త్రి దోష మూలాలు.
8. Botanical Gardens : బాటానికల్ గార్డెన్స్

Section - B సెక్షన్-B

5x10=50 Marks

Answer all Questions. : త్రి నిర్దేశించిన ప్రశ్నలకు సమాధానములు అవ్వాలి.

Draw neat and labelled diagrams where ever necessary.

అవసరమైన చిత్ర పటముల గీయండి.

9. (a) Write an essay on major ethnic groups of India.

భారతదేశములోని ప్రధాన జాతులను గురించి విస్తృత ప్రయత్నం.

- (b) Write a detailed account on Food plants used by tribal populations.

నిమ్మ జాతులు ఉపయోగించు తిండి పంటలను గురించి విస్తృత ప్రయత్నం.

10. (a) Write about medico-ethno botanical resources in India

ಭಾರತ ವೈದ್ಯಕೀಯ-ವನ್ಯಜೀವಿ ಸಂಪನ್ಮೂಲಗಳ ಬಗ್ಗೆ ಒಂದು ಪ್ರಬಂಧ ಬರೆಯಿರಿ.
(01)

(b) Write about the role of ethnic groups in the conservation of Plant genetic resources

ವೈವಿಧ್ಯಮಯ ಜನಜಾತಿಗಳ ಪಾತ್ರವು ಸಸ್ಯ ಸಂರಕ್ಷಣೆಯಲ್ಲಿ ಹೇಗೆ ಇರುತ್ತದೆ.

11. (a) write about sharing of wealth concept with examples from India

ಭಾರತದಲ್ಲಿ ಸಮೃದ್ಧಿ ಹಂಚಿಕೆಯ ಕಲ್ಪನೆಗೆ ಉದಾಹರಣೆ ನೀಡಿ.
(01)

(b) Write an essay on Intellectual Property Rights (IPR).

ಜ್ಞಾನ ಸಂಪನ್ಮೂಲ ಹಕ್ಕುಗಳ ಬಗ್ಗೆ ಒಂದು ಪ್ರಬಂಧ ಬರೆಯಿರಿ.

12. (a) What is Ayurveda? Describe the plants used in Ayurveda treatments.

ಆಯುರ್ವೇದವು ಏನು? ಆಯುರ್ವೇದದಲ್ಲಿ ಬಳಸುವ ಸಸ್ಯಗಳನ್ನು ವಿವರಿಸಿ.
(01)

(b) Write about the origin and basis of Siddha medicinal systems.

ಸಿದ್ಧ ವೈದ್ಯಕೀಯ ವ್ಯವಸ್ಥೆಯ ಮೂಲ ಮತ್ತು ಆಧಾರವನ್ನು ವಿವರಿಸಿ.


13. (a) Write about endemic and endangered medicinal plants

ಭಾರತದಲ್ಲಿ ಉತ್ಪತ್ತಿ ಹಾಗೂ ಅಪಾಯದ ಸ್ಥಿತಿಯಲ್ಲಿರುವ ವೈದ್ಯಕೀಯ ಸಸ್ಯಗಳ ಬಗ್ಗೆ ಒಂದು ಪ್ರಬಂಧ ಬರೆಯಿರಿ.
(01)

(b). Write an essay on *in-situ* conservation of Biodiversity.

ಜೀವವೈವಿಧ್ಯದ ಸ್ಥಳೀಯ ಸಂರಕ್ಷಣೆಯ ಬಗ್ಗೆ ಒಂದು ಪ್ರಬಂಧ ಬರೆಯಿರಿ.

1. Dr. K. SUTATHA
K. Sujatha B.O.S chairperson.

2.  B.O.S. member
(D. GOVINDANAI DU)

III BSc SEMESTER VI

Botany paper –VIII

Cluster Elective, Paper VIII-A-3- Pharmacognosy & Phytochemistry

Theory Model Question Paper

SECTION-A నక్షత్ర - A

Answer any five of the following

5x5=25

ఏవేని 5 ప్రశ్నలకు జవాబులు వ్రాయుము

1. Importance of Pharmacognosy
ఫార్మకాగ్నోసి ప్రాముఖ్యత
2. Common adulterants of *Catharanthus Roseus*
కదరాంధస్ రోసియస్ మొక్క బాగాలతో కల్పి చేసే పదార్థాలు
3. Differences between primary and secondary metabolites
ప్రాథమిక మరియు ద్వితీయ మెటబోలైట్స్ మధ్య భేదాలు
4. Commercial importance of Saponins and Withanolides
సపోనిన్స్ మరియు విథనోలైడ్స్ వాణిజ్య ప్రాముఖ్యత
5. Vaccines and toxins
వాక్సిన్స్ మరియు టాక్సిన్స్
6. Aroma therapy
అరోమా థెరపీ
7. Anthocyanins and Betacyanins
ఆంథోసయనిన్స్ మరియు బీటాసయనిన్స్
8. Role of Enzyme inhibitors
ఎంజైమ్ నిరోధకాల పాత్ర

SECTION-B నక్షత్ర - B

Answer all the questions

5x10=50

అన్ని ప్రశ్నలకు సమాధానం వ్రాయుము

9. (a) Explain chemical and pharmacological drug evaluation methods.

రసాయనిక మరియు ఔషధ మూల్యాంకన పద్ధతులను వివరించండి.

(OR)

- (b) Define pharmacognosy. Write an essay on classification of drugs.

ఫార్మకాగ్నోసిని నిర్వచించండి. ఔషధాల వర్గీకరణపై ఒక వ్యాసం వ్రాయండి.

10. (a) Write an essay on organoleptic and microscopic studies.

ఆర్గనోలేప్టిక్ మరియు మైక్రోస్కోపిక్ అధ్యయనాలపై ఒక వ్యాసం వ్రాయండి.

(OR)

- (b) Explain about common adulterants of medicinal plant parts like bark, leaf, seed, stem, root and other parts.

ఔషధ మొక్కల బెరడు, పత్రం, విత్తనం, కాండం, వేరు మరియు ఇతర భాగాలతో కల్పి చేసే పదార్థాల గురించి వివరించండి.

11. (a) Write an essay on Acetate pathway, Mevalonate pathway and Shikimate pathway of secondary metabolites.

ద్వితీయ జీవక్రియ ఉత్పన్న విధానాలైన అసిటేట్, మెవలోనేట్ మరియు షికిమేట్ పాథ్ వేల గురించి ఒక వ్యాసం వ్రాయండి.

(OR)

- (b) Write an essay on Terpenes, Phenolics, Alkaloids, Terpenoids and Steroids.

టెర్పెన్స్, ఫినాలిక్స్, ఆల్కలాయిడ్స్, టెర్పెనాయిడ్స్ మరియు స్టెరాయిడ్స్ పై ఒక వ్యాసం వ్రాయండి.

12. (a) Write an essay on biosynthesis and bioactivity of Alkaloids.

ఆల్కలాయిడ్స్ యొక్క జీవసంశ్లేషణ మరియు బయోఆక్టివిటీల గురించి ఒక వ్యాసం వ్రాయండి.

(OR)

- (b) Write an essay on biosynthesis of phenolic compounds-Tannins, Anthraquinones, Coumarins and Furanocoumarins.

ఫినాలిక్ సమ్మేళనాలైన టానిన్స్, ఆంథ్రాక్విన్సోన్స్, కౌమారిన్స్ మరియు ఫ్యూరన్ కౌమారిన్స్ జీవసంశ్లేషణ గురించి ఒక వ్యాసం వ్రాయండి.

13. (a) Write an essay on chemical nature and mode of action of vitamins and antibiotics.

విటమిన్లు మరియు యాంటీబయాటిక్స్ యొక్క రసాయన స్వభావం మరియు క్రియాశీలతను గురించి ఒక వ్యాసం వ్రాయండి.

(OR)

- (b) Explain the Pharmacological action of tumour inhibitors, antioxidants, phytoestrogens and other plant drugs.

కణితి నిరోధకాలు, యాంటీఆక్సిడెంట్స్, ఫైటోఈస్ట్రోజెన్లు మరియు ఇతర మొక్క ఔషధాల చర్యలను వివరించండి.

Dr. K. SUJATHA

K. Sujatha

B.O. S chair person

D Sarada

Asst. Professor, SVA GDC
Srikalahasthi

SEMESTER-VI - Electives
ELECTIVE Paper – VII-(A) : ANALYTICAL METHODS
IN CHEMISTRY

✓
45hrs (3h / w)

UNIT-I

Quantitative analysis:

10h

- a) Importance in various fields of science, steps involved in chemical analysis. Principles of volumetric analysis ∴ Theories of acid-base, redox, complexometric, iodometric and precipitation titrations - choice of indicators for these titrations.
- b) Principles of gravimetric analysis: precipitation, coagulation, peptization, coprecipitation, post precipitation, digestion, filtration and washing of precipitate, drying and ignition.

UNIT-II

Treatment of analytical data:

7h

Types of errors, significant figures and its importance, accuracy - methods of expressing accuracy, error analysis and minimization of errors, precision - methods of expressing precision, standard deviation and confidence limit.

UNIT-III

SEPARATION TECHNIQUES IN CHEMICAL ANALYSIS:

8h

SOLVENT EXTRACTION : Introduction, principle, techniques, factors affecting solvent extraction, Batch extraction, continuous extraction and counter current extraction. Synergism., Application - Determination of Iron (III)

ION EXCHANGE : Introduction, action of ion exchange resins, separation of inorganic mixtures, applications, Solvent extraction: Principle and process,

UNIT – IV

10h

Chromatography: Classification of chromatography methods, principles of differential migration adsorption phenomenon, Nature of adsorbents, solvent systems, R_f values, factors effecting R_f values.

Paper Chromatography: Principles, R_f values, experimental procedures, choice of paper and solvent systems, developments of chromatogram - ascending, descending and radial. Two dimensional chromatography, applications.

UNIT -V

10h

Thin layer Chromatography (TLC): Advantages. Principles, factors effecting R_f values. Experimental procedures. Adsorbents and solvents. Preparation of plates. Development of the chromatogram. Detection of the spots. Applications.

Column Chromatography: Principles, experimental procedures, Stationary and mobile Phases, Separation technique. Applications

HPLC : Basic principles and applications.

List of Reference Books

1. Analytical Chemistry by Skoog and Miller
2. A textbook of qualitative inorganic analysis by A.I. Vogel
3. Nanochemistry by Geoffrey Ozin and Andre Arsenault
4. Stereochemistry by D. Nasipuri
5. Organic Chemistry by Clayden

Dr. Aruna
(Dr. K. ARUNA)
B.O.S

LABORATORY COURSE – VI
Practical Paper – VII-(A) (at the end of semester VI) 30hrs (2 h / W)

50M

1. Identification of aminoacids by paper chromatography.
2. Determination of Zn using EDTA
3. Determination of Mg using EDTA

Q. Answer
(BOS)

CLUSTER ELECTIVES: Cluster Elective – I
Analytical and Physical
SEMESTER-VI
PAPER – VIII-A-1: POLYMER CHEMISTRY

45 hrs (3 h / w)

UNIT-I

12h

Introduction of polymers:

Basic definitions, degree of polymerization ,classification of polymers- Natural and Synthetic polymers, Organic and Inorganic polymers, Thermoplastic and Thermosetting polymers, Plastics, Elastomers , Fibers and Resins, Linear ,Branched and Cross Linked polymers, Addition polymers and Condensation Polymers, mechanism of polymerization. Free radical, ionic and Zeigler – Natta polymerization.

UNIT-II

10h

Techniques of Polymerization : Bulk polymerization , solution polymerization , suspension and Emulsion polymerization.

Molecular weights of polymers: Number average and weight average molecular weights
Determination of molecular weight of polymers by Viscometry , Osmometry and light scattering methods.

UNIT-III

6h

Kinetics of Free radical polymerization, Glass Transition temperature(Tg) and Determination of Tg:

Free volume theory, WLF equation, factors affecting glass transition temperature (Tg).

UNIT-IV

9h

Polymer additives:

Introduction to plastic additives – fillers, Plasticizers and Softeners , Lubricants and Flow Promoters, Anti aging additives , Flame Retardants , Colourants , Blowing agents , Cross linking agents ,Photo stabilizers , Nucleating agents.

UNIT-V

8h

Polymers and their applications:

Preparation and industrial applications of Polyethylene, Polyvinyl chloride, Teflon, Polyacrylonitrile, Terelene , Nylon6.6 silicones.

Reference Books:

1. Seymour, R.B. & Carraher, C.E. *Polymer Chemistry: An Introduction*, Marcel Dekker, Inc. New York, 1981.
2. Odian, G. *Principles of Polymerization*, 4th Ed. Wiley, 2004.
3. Billmeyer, F.W. *Textbook of Polymer Science*, 2nd Ed. Wiley Interscience, 1971.
4. Ghosh, P. *Polymer Science & Technology*, Tata McGraw-Hill Education, 1991.34
5. Lenz, R.W. *Organic Chemistry of Synthetic High Polymers*. Interscience Publishers, NewYork, 1967.

R. Amey
(BOS)

SEMESTER-VI
PAPER – VIII-A-2: INSTRUMENTAL METHODS OF ANALYSIS
45 hrs (3 h / w)

UNIT – I

Introduction to spectroscopic methods of analysis:

4 h

Recap of the spectroscopic methods covered in detail in the core chemistry syllabus: Treatment of analytical data, including error analysis. Classification of analytical methods and the types of instrumental methods. Consideration of electromagnetic radiation.

UNIT – II

Molecular spectroscopy:

8h

Infrared spectroscopy:

Interactions with molecules: absorption and scattering. Means of excitation (light sources), separation of spectrum (wavelength dispersion, time resolution), detection of the signal (heat, differential detection), interpretation of spectrum (qualitative, mixtures, resolution), advantages of Fourier Transform (FTIR). Samples and results expected. Applications: Issues of quality assurance and quality control, Special problems for portable instrumentation and rapid detection.

UNIT – III

10h

UV-Visible/ Near IR – emission, absorption, fluorescence and photoacoustic. Excitation sources (lasers, time resolution), wavelength dispersion (gratings, prisms, interference filters, laser, placement of sample relative to dispersion, resolution), Detection of signal (photocells, photomultipliers, diode arrays, sensitivity and S/N), Single and Double Beam instruments, Interpretation (quantification, mixtures, absorption vs. fluorescence and the use of time, photoacoustic, fluorescent tags).

UNIT – IV

Separation techniques

Chromatography: Gas chromatography, liquid chromatography, supercritical fluids, Importance of column technology (packing, capillaries), Separation based on increasing number of factors (volatility, solubility, interactions with stationary phase, size, electrical field), Detection: simple vs. specific (gas and liquid), Detection as a means of further analysis (use of tags and coupling to IR and MS), Electrophoresis (plates and capillary) and use with DNA analysis. 46 *Immunoassays and DNA techniques*

8h

Mass spectroscopy: Making the gaseous molecule into an ion (electron impact, chemical ionization), Making liquids and solids into ions (electrospray, electrical discharge, laser desorption, fast atom bombardment), Separation of ions on basis of mass to charge ratio, Magnetic, Time of flight, Electric quadrupole. Resolution, time and multiple separations, Detection and interpretation (how this is linked to excitation).

8h

Q. Anup
(BOS)
(Dr. K. Aruna)

UNIT – V

Elemental analysis:

10h

Mass spectrometry (electrical discharges).

Atomic spectroscopy: Atomic absorption, Atomic emission, and Atomic fluorescence. Excitation and getting sample into gas phase (flames, electrical discharges, plasmas), Wavelength separation and resolution (dependence on technique), Detection of radiation (simultaneous/scanning, signal noise), Interpretation (errors due to molecular and ionic species, matrix effects, other interferences).

NMR spectroscopy: Principle, Instrumentation, Factors affecting chemical shift, Spin coupling, Applications.

4h

Electroanalytical Methods: Potentiometry & Voltammetry

4h

Radiochemical Methods

4h

X-ray analysis and electron spectroscopy (surface analysis)

Reference books:

1. Skoog, D.A. Holler F.J. & Nieman, T.A. *Principles of Instrumental Analysis*, Cengage Learning India Ed.
2. Willard, H.H., Merritt, L.L., Dean, J. & Settoe, F.A. *Instrumental Methods of Analysis*, 7th Ed. Wadsworth Publishing Company Ltd., Belmont, California, USA, 1988.
3. P.W. Atkins: *Physical Chemistry*.
4. G.W. Castellan: *Physical Chemistry*.
5. C.N. Banwell: *Fundamentals of Molecular Spectroscopy*.
6. Brian Smith: *Infrared Spectral Interpretations: A Systematic Approach*.
7. W.J. Moore: *Physical Chemistry*

Q. Am J

SEMESTER-VI

PAPER – VIII-A-3 : ANALYSIS OF DRUGS, FOODS , DAIRY PRODUCTS & BIO-CHEMICAL ANALYSIS

45 hrs (3 h / w)

UNIT- I

Analysis of the following drugs and pharmaceuticals preparations:

(Knowledge of molecular formula, structure and analysis)

Analysis of analgesics and antipyretics like aspirin and paracetamol

Analysis of antimalarials like chloroquine .

Analysis of drugs in the treatment of infections and infestations :Amoxycillin., chloramphenicol, metronidazole, penicillin, tetracycline, cephalexin(cefalexin).

Anti tuberculous drug- isoniazid.

UNIT - II

Analysis of the following drugs and pharmaceuticals preparations:

(Knowledge of molecular formula, structure and analysis)

Analysis of antihistamine drugs and sedatives like: allegra, zyrtec(citirizine), alprazolam, trazodone, lorazepam, ambien(zolpidem), diazepam,

UNIT - III

Analysis of anti epileptic and anti convulsant drugs like phenobarbital and phenacemide.

Analysis of drugs used in case of cardiovascular drugs:atenolol, norvasc(amlodipine),

Analysis of lipitor(atorvastatin) a drug for the prevention of production of cholesterol.

Analysis of diuretics like: furosemide (Lasix), triamterene

Analysis of prevacid(lansoprazole) a drug used for the prevention of production of acids in stomach.

UNIT - IV

Analysis of Milk and milk products: Acidity, total solids, fat, total nitrogen, protein, lactose, phosphate activity, casein, chloride. Analysis of food materials-

Preservatives: Sodium carbonate, sodium benzoate, sorbic acid. Coloring matters, - Brilliant blue FCF, fast green FCF, tartrazine, erythrosine, sunset yellow FCF.

Flavoring agents - Vanilla, diacetyl, isoamyl acetate, limonene, ethylpropionate, allyl hexanoate and Adulterants in rice and wheat, wheat flour, sago, coconut oil, coffee powder, tea powder, milk..

UNIT - V

Clinical analysis of blood:Composition of blood,clinical analysis,trace elements in the body.Estimation of blood cholesterol,glucose,enzymes,RBC & WBC ,Blood gas analyser.

REFERENCE BOOKS :

- 1.F.J.Welcher-Standard methods of analysis,
- 2.A.I.Vogel-A text book of quantitative Inorganic analysis-ELBS,
- 3.F.D.Snell & F.M.Biffen-Commercial methods of analysis-D.B.Tarapuravala & sons,
- 4.J.J.Elving and I.M.Kolthoff- Chemical analysis - A series of monographs on analytical chemistry and its applications -- Inter Science- Vol I to VII.,

Q. Amef

5. Analytical Agricultural Chemistry by S.L. Chopra & J.S. Kanwar -- Kalyani Publishers

6. Quantitative analysis of drugs in pharmaceutical formulations by P.D. Sethi, CBS Publishers and Distributors, New Delhi
7. G. Ingram- Methods of organic elemental micro analysis- Chapman and Hall.,
8. H. Wincciam and Bobbles (Henry J)- Instrumental methods of analysis of food additives.,
9. H. Edward- The Chemical analysis of foods; practical treatise on the examination of food stuffs and the detection of adulterants,
10. The quantitative analysis of drugs- D.C. Garratt- Chapman & Hall.,
11. A text book of pharmaceutical analysis by K.A. Connors- Wiley- International.,
12. Comprehensive medicinal chemistry- Ed Corwin Hansch Vol 5, Pergamon Press.,

I. LABORATORY COURSE – VIII

Practical Paper – VIII-A-1: (at the end of semester VI)

30 hrs (2 h / W)

1. Preparation of Aspirin
2. Preparation of Paracetamol
3. Preparation of Acetanilide
4. Preparation of Barbutiric Acid
5. Preparation of Phenyl Azo β -naphthol

II. LABORATORY COURSE – VIII

Practical Paper – VIII-A-2 (at the end of semester VI)

30 hrs (2 h / W)

1. Green procedure for organic qualitative analysis: Detection of N, S and halogens
2. Acetylation of 1^o amine by green method: Preparation of acetanilide
3. Rearrangement reaction in green conditions: Benzil-Benzilic acid rearrangement
4. Electrophilic aromatic substitution reaction: Nitration of phenol
5. Radical coupling reaction: Preparation of 1,1-bis -2-naphthol
6. Green oxidation reaction: Synthesis of adipic acid
7. Green procedure for Diels Alder reaction between furan and maleic anhydride

List of Reference Books

1. Green Chemistry Theory and Practice. P.T. Anatas and J.C. Warner
2. Green Chemistry V.K. Ahluwalia Narosa, New Delhi.
3. Real world cases in Green Chemistry M.C. Cann and M.E. Connelly
4. Green Chemistry: Introductory Text M.Lancaster: Royal Society of Chemistry (London)
5. Green Chemistry: Introductory Text, M.Lancaster
6. Principles and practice of heterogeneous catalysis, Thomas J.M., Thomas M.J., John Wiley
7. Green Chemistry: Environmental friendly alternatives R S Sanghli and M.M Srivastava, Narosa Publications

VII-A-3 Practical:- Project Work

Q. Am J

SRI VENKATESWARA UNIVERSITY
CHEMISTRY - SEMESTER-VI
ELECTIVE Paper- VII-(A): ANALYTICAL METHODS IN CHEMISTRY
MODEL PAPER

SECTION-A

I)ANSWER ANY FIVE QUESTIONS **5X5=25 Marks**

- 1) Explain Accuracy & Precision ?
- 2) Write about R_f factor?
- 3) Explain about Complexometric Titrations?
- 4) What are Significant Figures?
- 5) Write a short note on Synergism?
- 6) Explain about the types of Ion exchange Resins?
- 7) Write a short note on Redox Titrations ?
- 8) Write the applications of Thin Layer Chromatography and Paper Chromatography?

SECTION-B

II)ANSWER ALL QUESTIONS **5X10=50Marks**

9.(a) What are Acid-Base Titrations? Explain the choice of indicator in Acid-Base Titrations?

(OR)

(b) Write the principles involved in gravimetric analysis?

10.(a) What are Errors? Explain different types of errors?

(OR)

(b) Write a short note on Standard deviation and Confidence limit?

11.(a) Write the principle, technique used in Batch extraction and determine Fe^{3+} ion in a given mixture?

(OR)

(b) Write a short note on Counter and Counter current extraction?

12.(a) Write the Principle and explain different types of experimental procedures involved in Paper chromatography?

(OR)

(b) Write the principle and applications of column chromatography?

13.(a) Write the Principle and explain different experimental steps involved in TLC?

(OR)

(b) Write the principle and applications of HPLC?

CHEMISTRY - MODEL PAPER
THREE YEAR DEGREE B.SC EXAMINATION
THIRD YEAR EXAMINATION
SEMESTER –VI
PAPER VIII-A-1: POLYMER CHEMISTRY

TIME :3 hrs

Max.Marks :75

PART –A

Answer any FIVE from the following questions.

5x5=25 M

- 1 What are polymers and write a short note on natural and synthetic polymers.
- 2 Explain the technique of emulsion polymerization.
- 3 What are the factors affecting the glass transition temperature(T_g)
- 4 Write short notes on a) Photo stabilizer b) Nucleating agents.
- 5 Write the preparation of polyethylene.
- 6 Explain briefly about the Zeigler-Natta Catalyst.
- 7 Write the technique of Bulk polymerization
- 8 Discuss the free volume theory of polymers.

PART – B

Answer the following questions.

5x10=50 M

- 9 Define degree of polymerization and write the mechanism of free radical polymerization.
(Or)
Explain the classification polymers.
- 10 Explain the types of molecular weight of polymers.
(Or)
Determine the molecular weight of polymer by Viscometry.
- 11 Write the kinetics of Ionic polymerisation
(Or)
Determine the glass transition temperature (T_g) and write the WLF equation.
- 12 Define additives and write the different types of additives.
(Or)
Explain briefly addition polymerization and condensed polymerization.
- 13 Write the preparation and industrial application PVC
(Or)
Write the preparation and Industrial application of Nylon 66

CHEMISTRY - MODEL PAPER
THREE YEAR B.S_C DEGREE EXAMINATION
THIRD YEAR EXAMINATIONS
SEMESTER -VI

Paper VIII A-2 INSTRUMENTAL METHODS OF ANALYSIS

Time : 3hrs

Max .Marks : 75

PART- A

Answer any five of the following .
Each question carries FIVE marks **5 X 5 =25 M**

1. Discuss any five types of analytical methods based on measurement property.
2. Write notes on the advantages of Fourier transform (FTR).
3. Discuss any three applications of absorption spectra.
4. Discuss the factors which affect column efficiency.
5. Write short notes on resolution.
6. Give the principle of liquid chromatography and explain its advantages.
7. Give a brief account of photomultipliers.
8. Write notes on Vibrational spectrum.

PART- B

Answer ALL the questions
Each question carries TEN marks **10 x 5 =50 M**

9. Write the classification of instrumental methods of analysis.

Or

Define errors. Explain different types of errors .How to determine Expression for errors.

10. What are the different types of detectors used in the detection of signal?

Or

How the separation of spectrum occurs in IR based on wavelength dispersion?

11. Explain the construction and working of single and double beam spectrophotometers.

Or

What are the different hard ware techniques for the enhancement of signal to Noise ratio (S/N) ?

12. What is the principle and working of Gas Chromatography . Explain diagrammatically.

Or

Explain briefly electrophoresis . How it is used in DNA analysis.

13. How a gaseous molecule is converted into Ion based on chemical ionization.

Or

Explain the separation of ions based on

- a) Mass to charge ratio**
- b) Time of flight.**

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CHEMISTRY - MODEL PAPER

THREE YEAR B.Sc, DEGREE EXAMINATION

3rd YEAR B.Sc EXAMINATIONS

SEMESTER – VI

**PAPER – VIII–A-3: ANALYSIS OF DRUGS, FOODS, DAIRY PRODUCTS &
BIO–CHEMICAL ANALYSIS**

Time : 3 hours

Maximum Marks : 75

PART – A

Answer any **FIVE** of the following questions

Each Question carries **FIVE** marks

5 x 5 = 25 Marks

1. Write the structure and molecular formula of Aspirin and paracetamol ?
2. Define what is meant by a drug ,infections and infestations?
3. Explain what is the role of antihistamine drugs and sedatives?
4. Explain the importance the drug Lansoprazole in prevention of production of acids in stomach?
5. Write a brief note on the drug Lipitor (atorvastatin) which prevents the production of cholesterol ?
6. Define what is meant by preservatives give suitable examples?
7. How do you know the adulterants in rice, wheat and wheat flour?
8. Explain what is meant clinical analysis and discuss its role in blood analysis ?

PART – B

Answer **ALL** the questions

Each Question carries **TEN** marks

5 x 10 = 50 Marks

- 09.(a) Define antimalerials , write the structure and preparation of chloroquine?

(OR)

(b) Write the preparations of Amoxycillin and tetracycline?

- 10.(a) Write the formula and preparation of alprazolam and diazepam ?

(OR)

(b) Write the structure and analysis of allegra and lorazepam?

11. (a) Define what is meant by Epileptic and anti convulsant drugs ? write the analysis method of phenobarbital?

(OR)

(b) Write the preprative methods of atenolol and triamterene?

- 12.(a) How do you estimate acidity , fat content and Lactose in milk?

(OR)

(b) Describe the importance of flavoring agents namely vanilla, isoamyl acetate and ethyl propionate in milk and milk products ?

13. (a) Define what is meant by clinical analysis of blood and how do you estimate trace elements in the Blood?

(OR)

(b) Write the composition of blood, how the glucose, cholesterol and enzymes in blood is estimated?

B.SC. COMPUTER SCIENCE/INFORMATION TECHNOLOGY (IT) UNDER CBCS

VI SEMESTER - W.E.F.2017-18

Structure of Computer Science/Information Technology (IT) Syllabus

Semester	Paper	Subject	Hrs.	Credits	IA	ES	Total
SEMESTER VI	VII (A/B/C)	Elective-I					
		A. Operating Systems	3	3	25	75	100
		Operating Systems Lab	3	2	0	50	50
		B. Computer Networks	3	3	25	75	100
		Computer Networks Lab	3	2	0	50	50
		C. Web Technologies	3	3	25	75	100
		Web Technologies Lab	3	2	0	50	50
	VIII Cluster – A- A1,A2 or Cluster-B- B1,B2 Or Cluster – C – C1,C2	Elective-II(Cluster A)					
		A1. Foundations of Data Science	3	3	25	75	100
		Foundations of Data Science Lab (through R)	3	2	0	50	50
		A2. Big Data Technology	3	3	25	75	100
		Big Data Technology Lab (Hadoop)	3	2	0	50	50
		Elective-II(Cluster B)					
		B1. Distributed Systems	3	3	25	75	100
		Distributed Systems Lab	3	2	0	50	50
		B2. Cloud Computing	3	3	25	75	100
		Cloud Computing Lab	3	2	0	50	50
		Elective-II(Cluster C)					
		C1. PHP – MySQL & Wordpress	3	3	25	75	100
		PHP-MySQL & Wordpress Lab	3	2	0	50	50
		C2. Advanced JavaScript : JQuery, Ajax, Angular JS & JSON	3	3	25	75	100
		Advanced JavaScript Lab	3	2	0	50	50
		Project – 2	5	5	25	75	100

**B.Sc. Computer Science/Information Technology (IT) Syllabus Under CBCS
W.E.F. 2017-18**

Structure of Computer Science/Information Technology (IT) Syllabus

III YEAR VI SEMESTER

**Paper-VII: Elective-A
OPERATING SYSTEMS**

COURSE OBJECTIVES

1. To understand the services provided by and the design of an operating system.
2. To understand the structure and organization of the file system.
3. To understand what a process is and how processes are synchronized and scheduled.
4. To understand different approaches to memory management.
5. Students should be able to use system calls for managing processes, memory and the file system.

COURSE OUTCOMES

1. Analyze the concepts of processes in operating system and illustration of the scheduling of processor for a given problem instance.
2. Identify the dead lock situation and provide appropriate solution so that protection and security of the operating system is also maintained.
3. Analyze memory management techniques, concepts of virtual memory and disk scheduling.
4. Understand the implementation of file systems and directories along with the interfacing of IO devices with the operating system.

UNIT - I

Operating System Introduction: Operating Systems Objectives and functions, Computer System Architecture, OS Structure, OS Operations, Evolution of Operating Systems - Simple Batch, Multi programmed, time shared, Parallel, Distributed Systems, Real-Time Systems, Operating System services.

UNIT - II

Process and CPU Scheduling - Process concepts - The Process, Process State, Process Control Block, Threads, Process Scheduling - Scheduling Queues, Schedulers, Context Switch, Preemptive Scheduling, Dispatcher, Scheduling Criteria, Scheduling algorithms, Case studies: Linux, Windows.

Process Coordination - Process Synchronization, The Critical section Problem, Synchronization Hardware, Semaphores, and Classic Problems of Synchronization, Monitors, Case Studies: Linux, Windows.

UNIT - III

Memory Management and Virtual Memory - Logical & physical Address Space, Swapping, Contiguous Allocation, Paging, Structure of Page Table. Segmentation, Segmentation with Paging, Virtual Memory, Demand Paging, Performance of Demanding Paging, Page Replacement Page Replacement Algorithms, Allocation of Frames.

UNIT - IV

File System Interface - The Concept of a File, Access methods, Directory Structure, File System Mounting, File Sharing, Protection, File System Structure,

Mass Storage Structure - Overview of Mass Storage Structure, Disk Structure, Disk Attachment, Disk Scheduling.

UNIT - V

Deadlocks - System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from Deadlock.

REFERENCES BOOKS:

1. Operating System Principles, Abraham Silberchatz, Peter B. Galvin, Greg Gagne 8th Edition, Wiley Student Edition.
2. Principles of Operating Systems by Naresh Chauhan, OXFORD University Press
3. Operating systems - Internals and Design Principles, W. Stallings, 6th Edition, Pearson.
4. Modern Operating Systems, Andrew S Tanenbaum 3rd Edition PHI.
5. Operating Systems A concept - based Approach, 2nd Edition, D. M. Dhamdhare, TMH.
6. Principles of Operating Systems, B. L. Stuart, Cengage learning, India Edition.
7. Operating Systems, A. S. Godbole, 2nd Edition, TMH

STUDENT ACTIVITY:

1. Load any new operating system into your computer.
2. Partition the memory in your system
3. Create a semaphore for process synchronization

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.Sc (CBCS)
Sixth Semester Examinations
OPERATING SYSTEMS

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about Operating System
2. Explain Process states
3. What is Synchronization?
4. Write short notes on paging.
5. Write short notes on frames.
6. What is file System?
7. Write about Memory Management
8. What is deadlock?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT – I

9. Explain the Operating Systems Objectives and functions.

OR

10. Explain in detail about Evolution of Operating Systems.

UNIT-II

11. Briefly explain about Scheduling algorithms.

OR

12. Write short notes on

a.) Semaphores b.) Monitors c.) Critical Section d.) Message Passing

UNIT-III

13. Explain Page Replacement Algorithm.

OR

14. Explain Memory management in detail?

UNIT-IV

15. Write about File System Interface.

OR

16. Write about Disk Scheduling with an example

UNIT-V

17. What is deadlock? Explain characteristics of Deadlock.

OR

18. Explain Methods for Handling Deadlocks in detail.

III YEAR VI SEMESTER
Paper-VII: Elective-A
OPERATING SYSTEMS LAB

OBJECTIVES:

- To use linux operating system for study of operating system concepts.
- To write the code to implement and modify various concepts in operating systems

OUTCOMES:

- The course objectives ensure the development of students applied skills in operating systems related areas.
- Students will gain knowledge in writing software routines modules or implementing various concepts of operating system.

LIST OF EXPERIMENTS:

1. Usage of following commands
Ls,pwd,ty,cat,who,who am I,rm, mkdir,rmdir,touch,cd.
2. Usage of following commands
Cal,cat(append),cat(concatenate),mv,cp,man,date.
3. Usage of following commands
Chmod,grep,tput(clear,highlight),bc.
4. Write a shell script to check if the number entered at the command line is Prime or not.
5. Write a shell script to modify “cal” command to display calendars of the specified months.
6. Write a shell script to modify “cal” command to display calendars of the specified range of months.
7. Write a shell script to accept a login name. If not a valid login name display message “entered login name is invalid”
8. Write a shell script to display date in the mm/dd/yy format.
9. To implement the FCFS Algorithm.
10. To implement the shortest job First Algorithm.
11. To implement the priority algorithm.
12. To implement the round robin Algorithm.
13. To implement the FIFO page replacement algorithm
14. To implement the LRU page replacement Algorithm.
14. To implement the Resource request Algorithm.
15. To implement the First-Fit, Best-Fit, Worst-Fit Algorithm.
16. To implement the sequential file organization.
17. To implement the Random file organization
18. Simulate Page Replacement Algorithms FIFO
19. Simulate Page Replacement Algorithms LRU
20. Simulate Page Replacement Algorithms OPTIMAL
21. Simulate Algorithm For Deadlock Prevention

III YEAR VI SEMESTER
Paper-VII: Elective-B
COMPUTER NETWORKS

COURSE OBJECTIVES

1. To provide an introduction to the fundamental concepts on data communication and the design of computer networks.
2. To get familiarized with the basic protocols of computer networks.

COURSE OUTCOMES

After this course, the student will be able to

1. Identify the different components in a Communication System and their respective roles.
2. Describe the technical issues related to the local Area Networks
3. Identify the common technologies available in establishing LAN infrastructure.

UNIT – I

Introduction: Uses of Computer Networks, Network Hardware, Network Software, Reference Models, Example Networks.

The Physical Layer: The Theoretical Basis for Data Communication, Guided Transmission Media, Wireless transmission, the public switched telephone network

UNIT – II

The Data Link Layer: Data Link Layer Design Issues, Error Detection and Correction, Sliding Window Protocols.

The Medium Access Control Sub-layer: The channel allocation problem, **Multiple Access Protocols, Ethernet**, Data Link Layer Switching.

UNIT – III

The Network Layer: Network Layer Design Issues, Routing Algorithms, Congestion control algorithms, Quality of Service.

Internet Working, The Network Layer in the Internet

UNIT – IV:

The Transport Layer: The Transport Service, Elements of Transport Protocols, Congestion Control Algorithms, The Internet Transport Protocols, The Internet Transport Protocols: TCP, Delay Tolerant Networks.

UNIT – V:

The Application Layer: DNS – The Domain Name System, Electronic Mail, The World Wide Web, Real Time Audio & Video, Content Delivery & Peer-to-Peer.

REFERENCE BOOKS:

1. Andrew S. Tanenbaum, “Computer Networks”, Fifth Edition, Pearson Education.
2. Bhushan Trivedi, Computer Networks , Oxford University Press
3. James F.Kurose, Keith W.Ross, “Computer Networking”, Third Edition, Pearson Education
4. Behrouz A Forouzan, “Data Communications and Networking”, Fourth Edition, TMH (2007).
5. Kurose & Ross, “**COMPUTER NETWORKS**” – A Top-down approach featuring the Internet”, Pearson Education – Alberto Leon – Garciak.

STUDENT ACTIVITY:

1. Study the functioning of network devices available in your organization .
2. Prepare a pictorial chart of LAN connections in your organization

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.Sc (CBCS)
Sixth Semester Examinations
COMPUTER NETWORKS

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about Networks
2. Explain Physical Layer
3. Uses of Network.
4. Write short notes on switching.
5. Write short notes on Error Correction.
6. What is TCP?
7. Write about DNS
8. What is protocol?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Explain in detail about Network hardware & Network Software.

OR

10. Explain in detail about Reference Model with examples.

UNIT-II

11. Briefly explain about Data Link Layer.

OR

12. Explain in detail about Medium Access Control (MAC)

UNIT-III

13. Explain Congestion control Algorithm.

OR

14. Briefly explain how network layer works in internet?

UNIT-IV

15. Write about Internet Transport Protocols.

OR

16. Write about Delay in Tolerant Networks

UNIT-V

17. Explain in detail about usage of Application layer in Networks.

OR

18. Explain Content Delivery & Peer-to-Peer Delivery in application layer.

III YEAR VI SEMESTER
Paper-VII: Elective-B
COMPUTER NETWORKS LAB

OBJECTIVES:

1. Analyze the different layers in networks.
2. Define, use, and differentiate such concepts as OSI-ISO,TCP/IP.
3. How to send bits from physical layer to data link layer
4. Sending frames from data link layer to Network layer
5. They can understand how the data transferred from source to destination
6. They can come to know that how the routing algorithms worked out in network layer

LIST OF EXPERIMENTS:

1. Analyze the different layers in networks.
2. Define, use, and differentiate such concepts as OSI-ISO,TCP/IP.

LIST OF EXPERIMENTS:

1. Write a program to implement data link layer framing method bit stuffing.
2. Write a program to implement data link layer framing method character stuffing.
3. Write a program to implement data link layer framing method character count.
4. Write a program to implement Cyclic Redundancy Check (CRC 12, CRC 16 and CRC CCIR) on a data set of characters.
5. Write a program to implement Dijkstra's algorithm to compute the shortest path through a graph.
6. Write a program to implement subnet graph with weights indicating delay between
7. Write a program to implement subnet

III Year B.Sc – VI Semester
Paper-VII: Elective-C - WEB TECHNOLOGIES

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 inter active and dynamic web sites.

COURSEOUTCOME

1. To understand the web architecture and web services.
2. To practice latest web technologies and tools by conducting experiments.
3. To design inter active web pages using HTML and Style sheets.
4. To study the frame work and building blocks of NET Integrated Development Environment.
5. To provide solutions by identifying and formulating IT related problems.

UNIT –I

HTML: Basic HTML, Document body, Text ,Hyperlinks, adding more formatting tags, Lists, Tables and images.

More HTML: Multimedia objects, Frames, Forms towards interactive, HTML document heading detail

UNIT –II

Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

UNIT– III

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays and functions.

UNIT – IV

Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling

DHTML with JavaScript: Data validation, opening a new window, messages and confirmations

UNIT –V

XML: defining data for web applications, basic XML, document type definition, presenting XML, document object model. Web Services

REFERENCES:

1. Harvey M. Deitel and Paul J. Deitel, **“Internet & World Wide Web How to Program”, 4/e**, Pearson Education.
2. Uttam Kumar Roy, Web Technologies from Oxford University Press.

STUDENT ACTIVITIES:

1. Prepare a website for your college
2. Prepare your personal website

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.Sc (CBCS)
Sixth Semester Examinations
WEB TECHNOLOGIES

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about HTML
2. Write short notes on CSS
3. What is DHTML?
4. Write short notes about Objects in JavaScript.
5. Write short notes on Data validation.
6. What is Web Services?
7. Write about web applications
8. What is XML?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Briefly describe about Lists, Tables using images in HTML.

OR

10. Explain in detail about Multimedia objects, Frames in HTML.

UNIT-II

11. Briefly explain about how to create your own styles with example.

OR

12. Explain in detail about properties and values in styles with an example.

UNIT-III

13. Explain string manipulations, mathematical functions in java Script with example

OR

14. Briefly explain about exception handling with example?

UNIT-IV

15. Write about opening a new window, messages and confirmations.

OR

16. Write about moving images with Program.

UNIT-V

17. Explain in detail about presenting XML.

OR

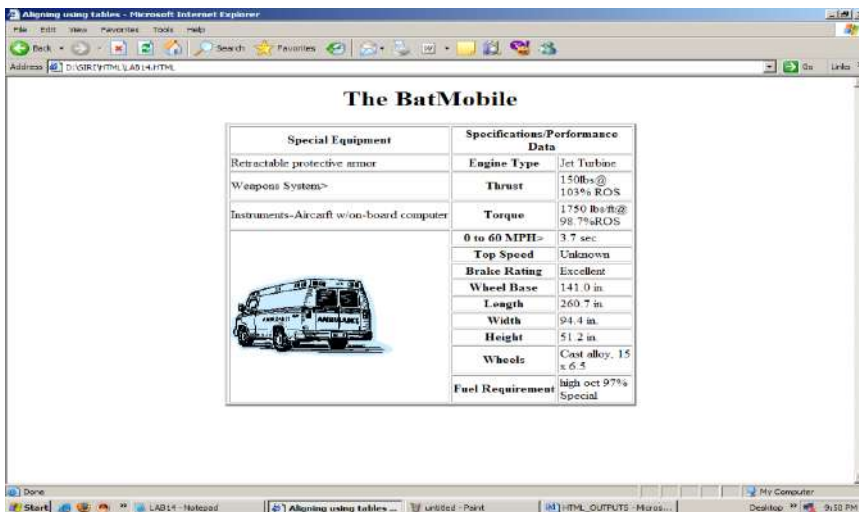
18. Explain about defining data for web applications in XML.

III YEAR VI SEMESTER

Paper-VII : Elective-C

WEB TECHNOLOGIES LAB

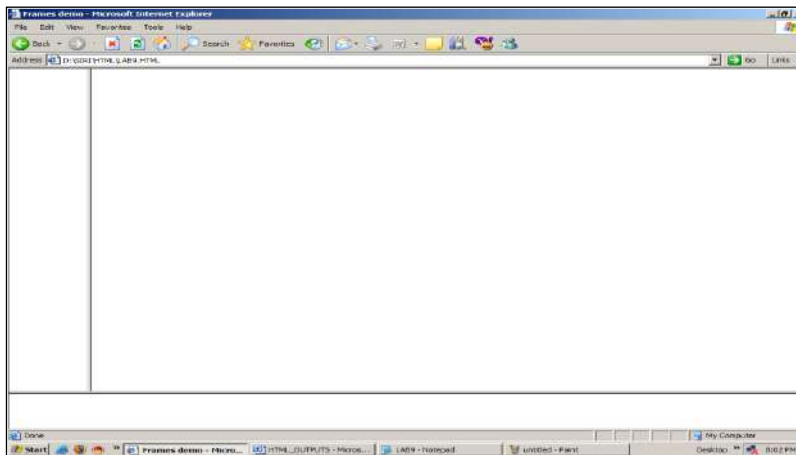
1. Write a HTML program illustrating text formatting.
2. Illustrate font variations in your HTML code.
3. Prepare a sample code to illustrate links between different sections of the page.
4. Create a simple HTML program to illustrate three types of lists.
5. Embed a calendar object in your web page.
6. Create an applet that accepts two numbers and perform all the arithmetic operations on them.
7. Create nested table to store your curriculum.
8. Create a form that accepts the information from the subscriber of a mailing system.
9. Design the page as follows:



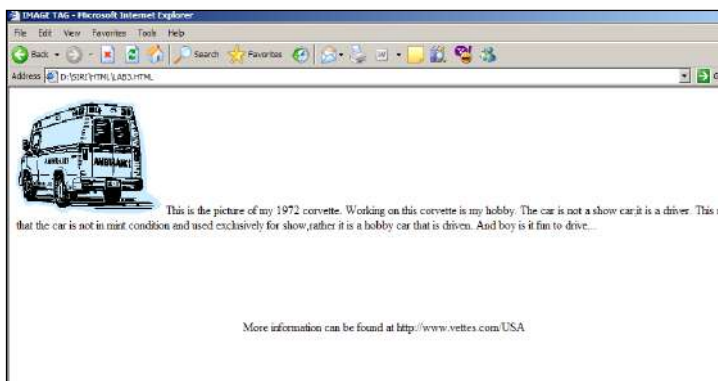
11. Using "table" tag, align the images as follows:



12. Divide the web page as follows:

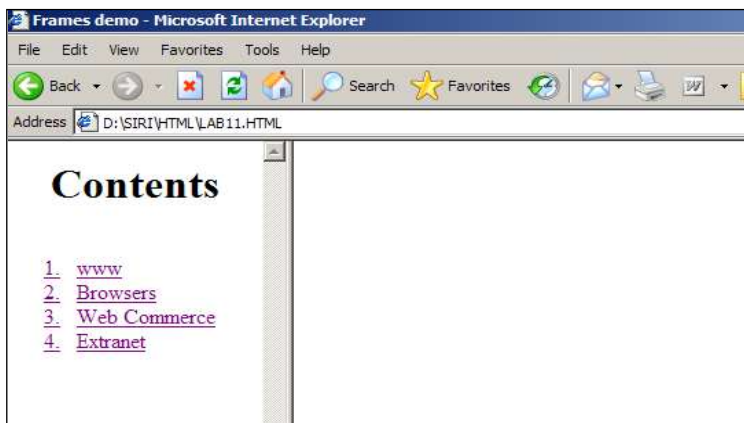


13. Design the page as follows:



14. Illustrate the horizontal rulers in your page.

15. Create a help file as follows:



16. Create a form using form tags(assume the form and fields).

17. Create a webpage containing your biodata(assume the form and fields).

18. Write a html program including style sheets.

20. Write a html program to layers of information in web page.

21. Create a static webpage.

III YEAR VI SEMESTER
(Cluster 1) Paper-VIII: Elective –A-1
FOUNDATIONS OF DATA SCIENCE

COURSE OBJECTIVES

Modern scientific, engineering, and business applications are increasingly dependent on data, existing traditional data analysis technologies were not designed for the complexity of the modern world. Data Science has emerged as a new, exciting, and fast-paced discipline that explores novel statistical, algorithmic, and implementation challenges that emerge in processing, storing, and extracting knowledge from Big Data.

COURSE OUTCOMES

1. Able to apply fundamental algorithmic ideas to process data.
2. Learn to apply hypotheses and data into actionable predictions.
3. Document and transfer the results and effectively communicate the findings using visualization techniques.

UNIT I

INTRODUCTION TO DATA SCIENCE : Data science process – roles, stages in data science project – working with data from files – working with relational databases – exploring data – managing data – cleaning and sampling for modelling and validation – introduction to NoSQL.

UNIT II

MODELING METHODS : Choosing and evaluating models – mapping problems to machine learning, evaluating clustering models, validating models – cluster analysis – K-means algorithm, Naïve Bayes – Memorization Methods – Linear and logistic regression – unsupervised methods.

UNIT III

INTRODUCTION TO R Language: Reading and getting data into R – ordered and unordered factors – arrays and matrices – lists and data frames – reading data from files.

UNIT IV

PROBABILITY DISTRIBUTIONS in R - Binomial, Poisson, Normal distributions. - Manipulating objects - data distribution.

UNIT V

DELIVERING RESULTS : Documentation and deployment – producing effective presentations– Introduction to graphical analysis – plot() function – displaying multivariate data – matrix plots – multiple plots in one window - exporting graph - using graphics parameters in R Language. Case studies.

REFERENCE BOOKS

- 1.Nina Zumel, John Mount, “Practical Data Science with R”, Manning Publications, 2014.
- 2.Jure Leskovec, Anand Rajaraman, Jeffrey D.Ullman, “Mining of Massive Datasets”, Cambridge University Press, 2014.
- 3.Mark Gardener, “Beginning R - The Statistical Programming Language”, John Wiley & Sons, Inc., 2012.
- 4.W. N. Venables, D. M. Smith and the R Core Team, “An Introduction to R”, 2013.
- 5.Tony Ojeda, Sean Patrick Murphy, Benjamin Bengfort, Abhijit Dasgupta, “Practical Data Science Cookbook”, Packt Publishing Ltd., 2014.
- 6.Nathan Yau, “Visualize This: The FlowingData Guide to Design, Visualization, and Statistics”, Wiley, 2011.
- 7.Boris lublinsky, Kevin t. Smith, Alexey Yakubovich, “Professional Hadoop Solutions”, Wiley, ISBN: 9788126551071, 2015.

STUDENT ACTIVITY:

1. **Collect data from any real time system and create clusters using any clustering algorithm**
2. **Read the student exam data in R perform statistical analysis on data and print results.**

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.Sc (CBCS)
Sixth Semester Examinations
Foundations of Data Science

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about Data science process
2. Write short notes relational databases
3. What is mapping?
4. Write short notes on Linear and logistic regression.
5. Write short notes on lists and data frames.
6. What is Normal distribution?
7. Write about Manipulating objects
8. What is plot() function?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Explain in detail about cleaning and sampling for modeling and validation.

OR

10. Explain in detail about stages in data science project.

UNIT-II

11. Briefly explain about evaluating clustering models.

OR

12. Explain in detail about K-means algorithm.

UNIT-III

13. Explain Reading and getting data into R – Language

OR

14. Briefly explain about ordered and unordered factors?

UNIT-IV

15. Describe in detail about R - Binomial.

OR

16. Write about on data distribution in Data Science.

UNIT-V

17. Explain in detail about using graphics parameters in R Language.

OR

18. Explain about displaying multivariate data.

III YEAR VI SEMESTER
(Cluster 1) Paper-VIII: Elective –A-1
FOUNDATIONS OF DATA SCIENCE LAB

OBJECTIVES :

- R is a well-developed, simple and effective programming language which includes conditionals, loops, user defined recursive functions and input and output facilities.
- R has an effective data handling and storage facility,
- R provides a suite of operators for calculations on arrays, lists, vectors and matrices.
- R provides a large, coherent and integrated collection of tools for data analysis.

OUTCOMES:

- 1) At end student will learn to handle the data through R.
- 2) Student will familiar with loading and unloading of packages.

I. Installing R and R studio

II. Basic Operations in r

1. Arithmetic Operations
2. Comments and spacing
3. Logical Operators - <, <=, >, >=, =, !=, &&, |

III.

1. Getting data into R, Basic data manipulation
2. Vectors, Matrices, operation on vectors and matrices.

IV.

1. Basic Plotting
2. Quantitative data
3. Frequency plots
4. Box plots
5. Scatter plot
6. Categorical data
7. Bar charts
8. Pie charts

V. Loops and functions

1. if, if else, while, for break, next, repeat.
2. Basic functions- Print(), exp(), Log(), sqrt(), abs(), sin(), Cos(), tan(), factorial(), rand().

III YEAR VI SEMESTER
(Cluster 1) Paper-VIII : Elective –A-2
BIG DATA TECHNOLOGY

COURSE OBJECTIVE

The Objective of this course is to provide practical foundation level training that enables immediate and effective participation in big data projects. The course provides grounding in basic and advanced methods to big data technology and tools, including MapReduce and Hadoop and its ecosystem.

COURSE OUTCOME

1. Learn tips and tricks for Big Data use cases and solutions.
2. Learn to build and maintain reliable, scalable, distributed systems with Apache Hadoop.
3. Able to apply Hadoop ecosystem components.

UNIT I

INTRODUCTION TO BIG DATA: Introduction – distributed file system – Big Data and its importance, Four V's in bigdata, Drivers for Big data, Big data analytics, Big data applications. Algorithms using map reduce, Matrix-Vector Multiplication by Map Reduce.

UNIT II

INTRODUCTION HADOOP : Big Data – Apache Hadoop & Hadoop EcoSystem – Moving Data in and out of Hadoop – Understanding inputs and outputs of MapReduce - Data Serialization.

UNIT- III

HADOOP ARCHITECTURE: Hadoop Architecture, Hadoop Storage: HDFS, Common Hadoop Shell commands , Anatomy of File Write and Read., NameNode, Secondary NameNode, and DataNode, Hadoop MapReduce paradigm, Map and Reduce tasks, Job, Tasktrackers - Cluster Setup – SSH & Hadoop Configuration – HDFS Administering – Monitoring & Maintenance.

UNIT-IV

HIVE AND HIVEQL, HBASE:- Hive Architecture and Installation, Comparison with Traditional Database, HiveQL - Querying Data - Sorting And Aggregating, Map Reduce Scripts, Joins & Subqueries,

UNIT-V

HBase concepts- Advanced Usage, Schema Design, Advance Indexing - Zookeeper - how it helps in monitoring a cluster, HBase uses Zookeeper and how to Build Applications with Zookeeper.

REFERENCE BOOKS

1. Boris lublinsky, Kevin t. Smith, Alexey Yakubovich, “Professional Hadoop Solutions”, Wiley, ISBN: 9788126551071, 2015.
- 2 .Big Data Black Book(Covers Hadoop 2, Map Reduce, Hive, Yarn, Pig & Data Visualization)- Dream Tech Publications
- 3.Chris Eaton, Dirk deroos et al. , “Understanding Big data ”, McGraw Hill, 2012.
4. Tom White, “HADOOP: The definitive Guide” , O Reilly 2012.
5. Vignesh Prajapati, “Big Data Analytics with R and Haoop”, Packet Publishing 2013.
6. Tom Plunkett, Brian Macdonald et al, “Oracle Big Data Handbook”, Oracle Press, 2014.
7. Jy Liebowitz, “Big Data and Business analytics”,CRC press, 2013.

STUDENT ACTIVITY:

1. Collect real time data and justify how it has become Big Data
2. Reduce the dimensionality of a big data using your own map reducer

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.Sc (CBCS)
Sixth Semester Examinations
BIG DATA TECHNOLOGY

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about Big Data
2. Write short notes on distributed file system
3. What is Data Serialization?
4. Write short notes on Shell commands.
5. Describe about Monitoring & Maintenance.
6. What is Hive Architecture?
7. Write about HiveQL.
8. What is Zookeeper?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Explain in detail about distributed file system.

OR

10. Explain in detail about Algorithms using map reduce.

UNIT-II

11. Briefly explain about Hadoop EcoSystem.

OR

12. Explain in detail about Hadoop.

UNIT-III

13. Explain briefly about Hadoop Architecture in detail.

OR

14. Briefly explain about cluster setup in Hadoop?

UNIT-IV

15. Describe in detail about Comparison with Traditional Database.

OR

16. Write about Joins & Subqueries.

UNIT-V

17. Explain in detail about Advance Indexing.

OR

18. Explain how to Build Applications with Zookeeper.

III YEAR VI SEMESTER
(Cluster 1) Paper-VIII : Elective –A-2
BIG DATA TECHNOLOGY LAB

OBJECTIVES :

- Understand what Hadoop is
- Understand what Big Data is
- Learn about other open source software related to Hadoop

OUTCOMES:

- i) Get help on the various Hadoop commands
- ii) Observe a Map-Reduce job in action

1. Implement the following Data Structures in Java

- a) Linked Lists
- b) Stacks
- c) Queues
- d) Set
- e) Map

2. (i) Perform setting up and Installing Hadoop in its three operating modes: Standalone
Pseudo distributed
Fully distributed
(ii) Use the web based tools to monitor your Hadoop setup.

3. Implement the following file management tasks in Hadoop.
Adding files and directories
Retrieving files
Deleting files

III YEAR VI SEMESTER
(Cluster 2) Paper-VIII : Elective –B-1

DISTRIBUTED SYSTEMS

COURSE OBJECTIVES

To expose the fundamentals of distributed computer systems, assuming the availability of facilities for data transmission.

To discuss multiple levels of distributed algorithms, distributed file systems, distributed databases, security and protection.

COURSE OUTCOMES

Create models for distributed systems.

Apply different techniques learned in the distributed system.

UNIT I

Introduction to Distributed Computing Systems, System Models, and Issues in Designing a Distributed Operating System, Examples of distributed systems.

UNIT II

Features of Message Passing System, Synchronization and Buffering, Introduction to RPC and its models, Transparency of RPC, Implementation Mechanism, Stub Generation and RPC Messages, Server Management, Call Semantics, Communication Protocols and Client Server Binding.

UNIT III

Introduction, Design and implementation of DSM system, Granularity and Consistency Model, Advantages of DSM, Clock Synchronization, Event Ordering, Mutual exclusion, Deadlock, Election Algorithms.

UNIT IV

Task Assignment Approach, Load Balancing Approach, Load Sharing Approach, Process Migration and Threads.

UNIT V

File Models, File Accessing Models, File Sharing Semantics, File Caching Schemes, File Replication, Atomic Transactions, Cryptography, Authentication, Access control and Digital Signatures.

REFERENCE BOOKS

1. Pradeep. K. Sinha: “ Distributed Operating Systems: Concepts and Design ” , PHI, 2007.
2. George Coulouris, Jean Dollimore, Tim Kindberg: “ Distributed Systems” , Concept and Design, 3rd Edition, Pearson Education, 2005.

STUDENT ACTIVITY

1. Implementation of Distributed Mutual Exclusion Algorithm.
2. Create a Distributed Simulation Environment.

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
B.Sc (CBCS)
Sixth Semester Examinations
Distributed Systems

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about distributed systems with examples.
2. Features of Message Passing System
3. Call Semantics
4. Write short notes on Communication Protocols.
5. Describe about DSM system.
6. What is Mutual exclusion?
7. Write about Threads.
8. What is File Sharing?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Briefly describe about System Models in distributed systems.

OR

10. Explain in detail about design issues in distributed systems.

UNIT-II

11. Briefly explain about Synchronization and Buffering.

OR

12. Explain in detail about Transparency of RPC .

UNIT-III

13. Explain briefly about Consistency Model.

OR

14. Briefly explain about Election Algorithms?

UNIT-IV

15. Describe in detail about Election Algorithms.

OR

16. Write about Load Sharing Approach.

UNIT-V

17. Explain in detail about File Models.

OR

18. Explain in detail about Access control and Digital Signatures.

III YEAR VI SEMESTER
(Cluster 2) Paper-VIII : Elective –B-1
DISTRIBUTED SYSTEMS LAB

OBJECTIVE:

It covers all the aspects of distributed system. It introduce its readers to basic concepts of middleware, states of art middleware technology

OUTCOMES:

1. Students will get the concepts of Inter-process communication
2. Students will get the concepts of Distributed Mutual Exclusion and Distributed Deadlock Detection algorithm.

1. To study client server based program using RPC.
2. To study Client server based program using RMI.
3. To study Implementation of Clock Synchronization (Logical/Physical)
4. To study Implementation of Election algorithm.
5. To study Implementation of Mutual Exclusion algorithms.
6. To write program multi-threaded client/server processes.
7. To write program to demonstrate process/code migration.

III YEAR VI SEMESTER
(Cluster 2) Paper-VIII : Elective –B-2

CLOUD COMPUTING

COURSE OBJECTIVES:

The student will learn about the cloud environment, building software systems and components that scale to millions of users in modern internet, cloud concepts capabilities across the various cloud service models including IaaS, PaaS, SaaS, and developing cloud based software applications on top of cloud platforms.

COURSE OUTCOMES

1. Compare the strengths and limitations of cloud computing
2. Identify the architecture, infrastructure and delivery models of cloud computing
3. Apply suitable virtualization concept.
4. Choose the appropriate cloud player , Programming Models and approach.
5. Address the core issues of cloud computing such as security, privacy and interoperability
6. Design Cloud Services and Set a private cloud

UNIT 1

Cloud Computing Overview – Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service , Broad network access , Location independent resource pooling , Rapid elasticity , Measured service

UNIT II

Cloud scenarios – Benefits: scalability , simplicity , vendors ,security. Limitations – Sensitive information - Application development – Security concerns - privacy concern with a third party - security level of third party - security benefits Regularity issues: Government policies

UNIT III

Cloud architecture: Cloud delivery model – SPI framework , SPI evolution , SPI vs. traditional IT Model

Software as a Service (SaaS): SaaS service providers – Google App Engine, Salesforce.com and google platform – Benefits – Operational benefits - Economic benefits – Evaluating SaaS **Platform as a Service (PaaS):** PaaS service providers – Right Scale – Salesforce.com – Rackspace – Force.com – Services and Benefits

UNIT IV

Infrastructure as a Service (IaaS): IaaS service providers – Amazon EC2 , GoGrid – Microsoft soft implementation and support – Amazon EC service level agreement – Recent developments – Benefits

Cloud deployment model : Public clouds – Private clouds – Community clouds - Hybrid clouds - Advantages of Cloud computing

UNIT V

Virtualization: Virtualization and cloud computing - Need of virtualization – cost, administration , fast deployment , reduce infrastructure cost - limitations

Types of hardware virtualization: Full virtualization - partial virtualization - para virtualization

Desktop virtualization: Software virtualization – Memory virtualization - Storage virtualization – Data virtualization – Network virtualization **Microsoft Implementation:** Microsoft Hyper V – Vmware features and infrastructure – Virtual Box - Thin client

REFERENCE BOOKS

1. Cloud computing a practical approach - Anthony T.Velte , Toby J. Velte Robert Elsenpeter TATA McGraw- Hill , New Delhi - 2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online - Michael Miller - Que 2008
3. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.
4. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madiseti, University Press
5. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christenvecctiola, S Tammarai selvi, TMH

STUDENT ACTIVITY:

1. Prepare the list of companies providing cloud services category wise.
2. Create a private cloud using local server

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
BCA (CBCS)
Sixth Semester Examinations
CLOUD COMPUTING

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Origin of Cloud computing?
2. Broad network access
3. Explain privacy concern with a third party?
4. Write about security levels in third party?
5. Write about Economic benefits?
6. Explain Private Clouds?
7. Write about Hybrid clouds?
8. Explain VMware?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Briefly describe components of Cloud computing?

OR

10. Explain the characteristics of cloud computing ?

UNIT-II

11. Explain in detail about the cloud scenarios?

OR

12. Briefly describe about limitations of Cloud computing?

UNIT-III

13. Explain about Cloud computing Architecture?

OR

14. Write about SaaS in detail?

UNIT-IV

15. Describe briefly about IaaS.

OR

16. Explain about Cloud development model?

UNIT-V

17. Write about need of virtualization in cloud computing?

OR

18. Explain in detail about VMware features and infrastructure?

III YEAR VI SEMESTER
(Cluster 2) Paper-VIII : Elective –B-2

CLOUD COMPUTING LAB

OUTCOMES: LEARNER WILL BE ABLE TO...

1. Appreciate cloud architecture
2. Create and run virtual machines on open source OS
3. implement Infrastructure , storage as a Service.

USE EUCALYPTUS OR OPEN NEBULA OR EQUIVALENT TO SET UP THE CLOUD AND DEMONSTRATE.

1. Find procedure to run the virtual machine of different configuration. Check how many virtual machines can be utilized at particular time.
2. Find procedure to attach virtual block to the virtual machine and check whether it holds the data even after the release of the virtual machine.
3. Install a C compiler in the virtual machine and execute a sample program.
4. Show the virtual machine migration based on the certain condition from one node to the other.
5. Find procedure to install storage controller and interact with it.

1. Introduction to cloud computing.
2. Creating a Warehouse Application in Sales Force.com.
3. Creating an Application in Sales Force.com using Apex programming Language.
4. Implementation of SOAP web services in C#/ JAVA Applications.
5. Implementation of Para- Virtualization using VM ware's workstation/
Oracle's Virtual Box and Guest O.S.
6. Case study: PAAS (Face book, Google App Engine)
7. Case Study: Amazon web services.

III YEAR VI SEMESTER
(Cluster C) Paper-VIII : Elective–C-1
Paper-VIII: PHP & MySql, Wordpress

COURSEOBJECTIVES

To introduce the concept of PHP and to give basic Knowledge of PHP. Learn about PHP Syntax. Arrays, PHP Loops, PHP and MySQL connectivity, PHP form validation, PHP form handling.

Overview of MySQL and PHP MyAdmin, Understand basic concepts of how a data base stores information via tables, Understanding of SQL syntax used with MySQL, Learn how to retrieve and manipulate data from one or more tables, Know how to filter data based upon multiple conditions, Updating and inserting data into existing tables, Learning how the relationships between tables will affect the SQL, The advantages of store procedures with storing data using variables and functions, How SQL can be used with programming languages like PHP. to create dynamic websites for visitors, Review of some sample PHP projects interacting with MySQL.

COURSEOUTCOMES

After completing this course satisfactorily, a student will be able to:

1. Introduction to web development with PHP
2. How to code a PHP application
3. Introduction to relational databases and MySQL
4. How to use PHP with a MySQL database
5. How to use the MVC pattern to organize your code
6. How to test and debug a PHP application
7. How to work with form data
8. How to code control statements
9. How to work with strings and numbers
10. How to work with dates
11. How to create and use arrays
12. How to work with cookies and sessions
13. How to create and use functions
14. How to use regular expressions, handle exceptions, and validate data

UNIT I

Introduction PHP and MYSQL, features, merits and demerits of PHP and MYSQL.

The Basics of PHP scripts: The Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants. Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output.

UNIT II

Working with Functions: What is function?, Calling functions, Defining Functions, Returning the values from User-Defined Functions, Variable Scope, Saving state between Function calls with the static statement, more about arguments.

Working with Arrays: What are Arrays?, Creating Arrays, Some Array-Related Functions. Working with Objects: Creating Objects, Object Instance Working with Strings, Dates and Time: Formatting strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.

UNIT III

Working with Forms: Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, Working with File Uploads.

Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables, passing session IDs in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users.

UNIT IV

Working with Files: Including Files with include(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or Appending to a File.

Introduction to MySQL and Interfacing with Databases through PHP Understanding the database design process: The Importance of Good Database Design, Types of Table Relationships, Understanding Normalization. Learning basic SQL Commands: MySQL Data types, Table Creation Syntax, Using INSERT, UPDATE , DELETE, REPLACE, SELECT commands, WHERE in your Queries, Selecting from Multiple Tables, Date and Time Functions in MySQL.

UNIT V

Using Transaction and stored procedures in MySQL: What is Transaction?, What are Stored Procedures? Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data.

Creating an Online Address Book: Planning and Creating Database Tables, Creating Menu, Creating Record Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism, Adding Sub-entities to a Record.

Word press: About Word press, features and advantages of word press.

REFERENCEBOOKS

1. JulieC.Meloni,PHPMySQLandApache,SAMSTeachyourself,PearsonEducation(2007).
2. XueBai Michael Ekedahl, The web warrior guide to Web Programming, Thomson(2006).

STUDENT ACTIVITY:

1. **Installing and Configuring MySQL:** Current and Future Versions of MySQL, How to Get MySQL, Installing MySQL on Linux, Windows, Trouble Shooting your Installation, Basic Security Guidelines, Introducing MySQL Privilege System, Working with User Privileges.
2. Installing and Configuring Apache: Current and future versions of Apache, Choosing the Appropriate Installation Method, Windows, Apache Configuration File Structure, Apache Log Files, Windows, php in Basics,
3. Creation of a web page using word press
4. Creation of student data base of the college

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
BCA (CBCS)
Sixth Semester Examinations
PHP & MySql, Wordpress

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.
Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about User Privileges?
2. Trouble Shooting
3. What are Arrays?
4. Write about Working with Strings?
5. Write about User defined Arrays?
6. Explain passthru()?
7. What is Transaction?
8. Explain working with posts?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Briefly describe Current and Future Versions of MySQL?

OR

10. Explain Building PHP on Linux with Apache?

UNIT-II

11. What is function? Explain User-Defined Functions in detail.

OR

12. Briefly describe about Manipulating Strings with PHP?

UNIT-III

13. Explain about Working with forms?

OR

14. Write about Running Commands with system() or passthru().?

UNIT-IV

15. Describe briefly about Using Transaction and stored procedures in MySQL.

OR

16. Explain about Working with MySQL Data in detail?

UNIT-V

17. Explain in detail about servers like wamp, bitnami?

OR

18. Explain in detail about extending word press with plug-ins?

PHP, MySql & Wordpress LAB

MySQL Lab Cycle

CYCLE -1

An Enterprise wishes to maintain the details about his suppliers and other corresponding details. For that he uses the following details.

Suppliers (sid: Integer, sname: string, address: string)

Parts (pid: Integer, pname: string, color: string)

Catalog (sid: integer, pid: integer, cost: real)

THE CATALOG RELATION LISTS THE PRICES CHARGED FOR PARTS BY SUPPLIERS.

Write the following queries in SQL:

1. Find the pnames of parts for which there is some supplier.
2. Find the snames of suppliers who supply every part.
3. Find the snames of supplier who supply every red part.
4. Find the pnames of parts supplied by London Supplier and by no one else.
5. Find the sid's of suppliers who charge more for some part than the average cost of that part.
6. For each part, find the sname of the supplier who charges the most for that part.
7. Find the sid's of suppliers who supply only red parts.
8. Find the sid's of suppliers who supply a red and a green part.
9. Find the sid's of suppliers who supply a red or green part.
10. Find the total amount has to pay for that supplier by part located from London.

CYCLE – 2

An organisation wishes to maintain the status about the working hours made by his employees. For that he uses the following tables.

Emp (eid: integer, ename: string, age: integer, salary: real)

Works (eid: integer, did: integer, pct_time: integer)

Dept (did: integer, budget: real, managerid: integer)

An employee can work in more than one department; the pct_time field of the works relation shows the percentage of time that a given employee works in a given department.

RESOLVE THE FOLLOWING QUERIES.

1. Print the names and ages of each employee who works in both Hardware and Software departments.
2. For each department with more than 20 full time equivalent employees (i.e., where the part-time and full-time employees add up to at least that many full-time employees), print the did's together with the number of employees that work in that department.
3. Print the name of each employee whose salary exceeds the budget of all of the departments that he or she work in.
4. Find the managerid's of managers who manage only departments with budgets greater than 1,000,000.
5. Find the enames of managers who manage the departments with largest budget.
6. If a manager manages more than one department, he or she controls the sum of all the budgets for those departments. Find the managerid's of managers who control more than 5,000,000.
7. Find the managerid's of managers who control the highest amount.
8. Find the average manager salary.

PHP Lab Cycle

1. Write a PHP program to Display "Hello"
2. Write a PHP Program to display the today's date.
3. Write a PHP Program to read the employee details.
4. Write a PHP Program to display the
5. Write a PHP program to prepare the student marks list.
6. Write a PHP program to generate the multiplication of two matrices.
7. Write a PHP Application to perform demonstrate the college website.
8. Write a PHP application to add new Rows in a Table.
9. Write a PHP application to modify the Rows in a Table.
10. Write a PHP application to delete the Rows from a Table.
11. Write a PHP application to fetch the Rows in a Table.
12. Develop an PHP application to make following Operations
 - i. Registration of Users.
 - ii. Insert the details of the Users.
 - iii. Modify the Details.
 - iv. Transaction Maintenance.
 - a) No of times Logged in
 - b) Time Spent on each login.
 - c) Restrict the user for three trials only.
 - d) Delete the user if he spent more than 100 Hrs of transaction.

WORDPRESS LAB

1. Installation and configuration of word press.
2. Create a site and add a theme to it.

(Cluster C) Paper-VIII: Elective –C-2
Paper-VIII: Advanced Java Script
JQUERY /AJAX / JSON / Angular JS

COURSE OBJECTIVE:

To impart knowledge in designing a webpage in a structured way by using advanced java script ie., using different scripting languages.

COURSE OUTCOMES

On completing the subject, students will be able to: create a dynamic website using advanced features of JavaScript and create a website with good and attractive design

UNIT I

JQuery – Basics: String, Numbers, Boolean, Objects, Arrays, Functions, Arguments, Scope, Built-in Functions. **jQuery – Selectors:** CSS Element Selector, CSS Element ID Selector, CSS Element Class Selector, CSS Universal Selector, Multiple Elements E, F, G Selector, Callback Functions. **jQuery – DOM Attributes:** Get Attribute Value, Set Attribute Value. **jQuery – DOM Traversing :** Find Elements by index, Filtering out Elements, Locating Descendent Elements, JQuery DOM Traversing Methods.

UNIT II

jQuery – CSS Methods : Apply CSS Properties, Apply Multiple CSS Properties, Setting Element Width & Height, JQuery CSS Methods. **jQuery – DOM Manipulation Methods:** Content Manipulation, DOM Element Replacement, Removing DOM Elements, Inserting DOM elements, DOM Manipulation Methods. **jQuery – Events Handling:** Binding event handlers, Removing event handlers, Event Types, The Event Object, The Event Attributes. **jQuery – Effects:** JQuery Effect Methods, jQuery Hide and Show, jQuery Toggle, jQuery Slide – slideDown, slideUp, slideToggle, jQuery Fade – fadeIn, fadeOut, fadeTo, jQuery Custom Animations

UNIT III

Intro to **jQuery UI**, Need of jQuery UI in real web sites, Downloading jQuery UI, Importing jQuery UI, Draggable, Droppable, Resizable, Selectable, Sortable, Accordion, Auto Complete, Button Set, Date Picker, Dialog, Menu, Progress Bar, Slider, Spinner, Tabs, Tooltip, Color Animation, Easing Effects, addClass, removeClass, Effects, jQuery UI themes, Customizing jQuery UI widgets / plug-ins, jQuery UI with CDN, Consuming jQuery Plug-ins from 3rd party web sites jQuery Validations, Intro to jQuery validation plug-in, Using jQuery validation plug-in, Regular expressions.

UNIT IV

Intro to AJAX, Need of AJAX in real web sites, Getting database data using jQuery-AJAX, Inserting, Updating, Deleting database data using jQuery-AJAX Grid Development using jQuery-AJAX Intro to **JSON** JSON syntax, Need of JSON in real web sites, JSON object, JSON array, Complex JSON objects, Reading JSON objects using jQuery.

UNIT V

Intro to **AngularJS**, Need of AngularJS in real web sites, Downloading AngularJS, AngularJS first example, AngularJS built-in directives, AngularJS expressions, AngularJS modules, AngularJS controllers, AngularJS scope AngularJS dependency injection AngularJS, bootstrapping AngularJS data bindings, AngularJS \$watch, AngularJS filters, AngularJS events, AngularJS AJAX, Ng-repeat, AngularJS with json arrays, AngularJS registration form and login form, AngularJS CRUD operations, AngularJS Animations, AngularJS validations AngularJS \$q, AngularJS custom values, AngularJS custom factories, AngularJS custom services, AngularJS custom directives, AngularJS custom providers, AngularJS Routing, AngularUI Routing.

REFERENCE BOOKS

1. jQuery UI 1.8: The User Interface Library for jQuery by Dan Wellman
2. jQuery Fundamentals by Rebecca Murphey
3. Ajax: The Complete Reference by Thomas A. Powell
4. Pro AngularJS by Adam Freeman Kindle Edition

STUDENT ACTIVITY:

1. Creation of website for a small scale company
2. Creation of website for a student database

Code No:

SRI VENKATESWARA UNIVERSITY: TIRUPATI
BCA (CBCS)
Sixth Semester Examinations
Advanced Java Script
JQUERY /AJAX / JSON / Angular JS

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer any five of the following Questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks

PART - A

Answer any Five of the following. All questions carry equal marks

5 x 5 = 25 Marks

1. Write about Built-in Functions?
2. Write about JQuery.
3. Multiple CSS Properties?
4. Write about DOM Element?
5. Write about Event Object?
6. Explain jQuery UI?
7. Need of AJAX?
8. Explain Need of AngularJS?

PART - B

Answer one question from each Unit. All questions carry equal marks

5 x 10 = 50 Marks

UNIT - I

9. Briefly describe JQuery DOM Traversing Methods?

OR

10. Explain CSS Universal Selector?

UNIT-II

11. Explain in detail about Binding event handlers, Removing event handlers.

OR

12. Briefly describe about jQuery – Effects?

UNIT-III

13. Explain about jQuery Validations?

OR

14. Write about Downloading jQuery UI and importing jQuery?

UNIT-IV

15. Describe briefly about Getting database data using jQuery.

OR

16. Explain about Grid Development using jQuery-AJAX?

UNIT-V

17. Explain in detail about AngularJS built-in directives?

OR

18. Explain in detail about AngularJS registration form and login form with example?

III YEAR VI SEMESTER

Advanced Java Script JQUERY /AJAX / JSON / Angular JS

1. Using jQuery find all textareas, and makes a border. Then adds all paragraphs to the jQuery object to set their borders red.
2. Using jQuery add the class "w3r_font_color" and w3r_background to the last paragraph element.
3. Using jQuery add a new class to an element that already has a class.
4. Using jQuery insert some HTML after all paragraphs.
5. Using jQuery insert a DOM element after all paragraphs.
6. Convert three headers and content panels into an accordion. Initialize the accordion and specify the animate option
7. Convert three headers and content panels into an accordion. Initialize the accordion and specify the height.
8. Create a pre-populated list of values and delay in milliseconds between a keystroke occurs and a search is performed.
9. Initialize the button and specify the disable option.
10. Initialize the button and specify an icon on the button.
11. Initialize the button and do not show the label.
12. Create a simple jQuery UI Datepicker. Now pick a date and store it in a textbox.
13. Initialize the datepicker and specify a text to display for the week of the year column heading.

III YEAR VI SEMESTER

PROJECT-2

Follow SDLC process for real time applications and develop real time application project

The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories.

The project is of 5 hours/week for one (semester VI) semester duration and a student is expected to do planning, analyzing, designing, coding, and implementing the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.

The project proposal should include the following:

Title

Objectives

Input and output

Details of modules and process logic

Limitations of the project

Tools/platforms, Languages to be used

Scope of future application

The Project work should be either an individual one or a group of not more than three members and submit a project report at the end of the semester. The students shall defend their dissertation in front of experts during viva-voce examinations.

B.A./B.Sc. THIRD YEAR MATHEMATICS SYLLABUS
SEMESTER – VI, PAPER – VII-(A)
ELECTIVE-VII(A); LAPLACE TRANSFORMS

60 Hrs

UNIT – 1 (12 hrs) Laplace Transform I :-

Definition of - Integral Transform – Laplace Transform Linearity, Property, Piecewise continuous Functions, Existence of Laplace Transform, Functions of Exponential order, and of Class A.

UNIT – 2 (12 hrs) Laplace Transform II :-

First Shifting Theorem, Second Shifting Theorem, Change of Scale Property, Laplace Transform of the derivative of $f(t)$, Initial Value theorem and Final Value theorem.

UNIT – 3 (12 hrs) Laplace Transform III :-

Laplace Transform of Integrals – Multiplication by t , Multiplication by t^n – Division by t . Laplace transform of Bessel Function, Laplace Transform of Error Function, Laplace Transform of Sine and cosine integrals.

UNIT – 4 (12 hrs) Inverse Laplace Transform I :-

Definition of Inverse Laplace Transform. Linearity, Property, First Shifting Theorem, Second Shifting Theorem, Change of Scale property, use of partial fractions, Examples.

UNIT – 5 (12 hrs) Inverse Laplace Transform II :-

Inverse Laplace transforms of Derivatives–Inverse Laplace Transforms of Integrals – Multiplication by Powers of 'P'– Division by powers of 'P'– Convolution Definition – Convolution Theorem – proof and Applications – Heaviside's Expansion theorem and its Applications.

Reference Books :-

1. Laplace Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut.
2. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Co., Pvt. Ltd., New Delhi.
3. Laplace and Fourier Transforms by Dr. J.K. Goyal and K.P. Gupta, Published by Pragathi Prakashan, Meerut.
4. Integral Transforms by M.D. Raising hania, - H.C. Saxsena and H.K. Dass Published by S. Chand and Co., Pvt.Ltd., New Delhi.

Suggested Activities:

Seminar/ Quiz/ Assignments



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S. V UNIVERSITY, MODEL PAPER
THIRD YEAR . B. A, B. Sc, DEGREE EXAMINATIONS
SEMISTER . IV: CHOICE BASED CREDIT SYSTEM
PARTIII, MATHEMATICS
ELECTIVE – VII(A): LAPLACE TRANSFORMS
(NEW SYLLABUS W. E. F. 2015 – 16)

PART – A


Answer any five of the following questions $5 \times 5 = 25.$

- (1) Define the function of exponential order
- (2) Define change of scalar property
- (3) Laplace transform of integral.
- (4) If $F(t) = t^2, 0 < t < 2$ and $F(t+2) = F(t)$ then find $L\{F(t)\}$.
- (5) Find $L\{t^2 \cos at\}$.
- (6) Evaluate $L^{-1}\left\{\frac{e^{-3s}}{(s-4)^2}\right\}$.
- (7) Prove that $L^{-1}\left\{\tan^{-1} \frac{2}{s^2}\right\} = \frac{2}{t} \sin t \sin ht$.
- (8) Evaluate $L^{-1}\left\{\frac{4s+5}{(s-1)^2(s+2)}\right\}$.

PART – B

Answer all questions $5 \times 10 = 50$

- (9)(a) Suppose $F(t)$ is piecewise continuity in every finite interval and is of exponential order a as $t \rightarrow \infty$. Then f exists $\forall s > a$.
(or).
(b) State and prove linear property.
- (10)(a) State and prove Second Shifting theorem.
(or)


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(b) Prove that $L\{J_0(t)\} = \frac{1}{\sqrt{s^2 + 1}}$ and hence deduce that

(i) $L\{t J_0(at)\}$, (ii) $L\{e^{-at} J_0(at)\}$.

(11)(a) State and prove Initial value theorem.

(or)

(b) prove that $L\{c(t)\} = \frac{\log(s^2 + 1)}{2s}$.

(12)(a) State and prove Convolution theorem.

(or)

(b) Find $L^{-1}\left\{\frac{1}{(s-1)^5(s+2)}\right\}$

(13)(a) Using Heavi - sides expansion formula, find $L^{-1}\left\{\frac{3s+1}{(s-1)(s^2+1)}\right\}$.

(or).

(b) Show that $\int_0^\infty \sin x^2 dx = \frac{1}{2} \sqrt{\frac{\pi}{2}}$.


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**B.A./B.Sc. THIRD YEAR MATHEMATICS SYLLABUS,
SEMESTER – VI, CLUSTER – A, PAPER – VIII-A-1
Cluster Elective- VIII-A-1: INTEGRAL TRANSFORMS**

60 Hrs

UNIT – 1 (12 hrs) Application of Laplace Transform to solutions of Differential Equations :-

Solutions of ordinary Differential Equations.
Solutions of Differential Equations with constants co-efficient
Solutions of Differential Equations with Variable co-efficient

UNIT – 2 (12 hrs) Application of Laplace Transform :-

Solution of simultaneous ordinary Differential Equations.
Solutions of partial Differential Equations.

UNIT – 3 (12 hrs) Application of Laplace Transforms to Integral Equations :-

Definitions : Integral Equations-Abel's, Integral Equation-Integral Equation of Convolution Type, Integro Differential Equations. Application of L.T. to Integral Equations.

UNIT – 4 (12 hrs) Fourier Transforms-I :-

Definition of Fourier Transform – Fourier's in Transform – Fourier cosine Transform – Linear Property of Fourier Transform – Change of Scale Property for Fourier Transform – sine Transform and cosine transform shifting property – modulation theorem.

UNIT – 5 (12 hrs) Fourier Transform-II :-

Convolution Definition – Convolution Theorem for Fourier transform – parseval's Indentify – Relationship between Fourier and Laplace transforms – problems related to Integral Equations.

Finte Fourier Transforms :-

Finte Fourier Sine Transform – Finte Fourier Cosine Transform – Inversion formula for sine and cosine Transforms only statement and related problems.

Reference Books :-

1. Integral Transforms by A.R. Vasistha and Dr. R.K. Gupta Published by Krishna Prakashan Media Pvt. Ltd. Meerut.
2. A Course of Mathematical Analysis by Shanthi Narayana and P.K. Mittal, Published by S. Chand and Company pvt. Ltd., New Delhi.
3. Fourier Series and Integral Transforms by Dr. S. Sreenadh Published by S.Chand and Company Pvt. Ltd., New Delhi.
4. Lapalce and Fourier Transforms by Dr. J.K. Goyal and K.P. Gupta, Published by Pragathi Prakashan, Meerut.
5. Integral Transforms by M.D. Raising hania, - H.C. Saxsena and H.K. Dass Published by S.Chand and Company pvt. Ltd., New Delhi.

Suggested Activities:

Seminar/ Quiz/ Assignments

S. V UNIVERSITY., MODEL PAPER
THIRD YEAR . B. A, B. Sc, DEGREE EXAMINATIONS

SEMISTER . IV: CHOICE BASED CREDIT SYSTEM

PARTIII, MATHEMATICS

CLUSER ELECTIVE – VII – A – 1: INTEGRAL TRANSFORMS

(NEW SYLLABUS W. E. F. 2015 – 16)

PART – A

Answer any five of the following questions $5 \times 5 = 25.$

(1) Using Laplace transform method, solve $y''(t) + y(t) = t$, given that $y'(0) = 1$,

$$y(\pi) = 0$$

(2) Solve $\frac{d^2y}{dx^2} + y = 0$ under the condition that $y = 1, \frac{dy}{dt} = 0$, when $t = 0$

(3) Apply Laplace transform to solve $\frac{dy}{dx} - \frac{dy}{dt} = 1 - e^{-t}, 0 < x < 1, t > 0$,

given that $y(x, 0) = x$

(4) Solve the Integral equation $F(t) = 1 + \int_0^t F(u) \sin(t - u) du$.

(5) Convert the integral equation $F(t) = t^2 - 3t + 4 - 3 \int_0^t (t - u)^2 F(u) du$

into differential equation and associated condition.

(6) Relationship between Fourier transform and Laplace transform

(7) Show that the Fourier transform of $f(x) = e^{-\frac{x^2}{2}}$ is $\sqrt{2\pi} e^{-\frac{s^2}{2}}$.

(8) State and prove parsevals identity for fourier transform.

PART – B

Answer all questions

$5 \times 10 = 50$

(9)(a) Using Laplace transform method $\frac{d^2y}{dt^2} + 4\frac{dy}{dt} + 5y = (\cos t - \sin t)e^{-2t}$,

subject to the boundary conditions $y(0) = 1, y'(0) = -3$


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(or).

(b) Solve $(D^4 - 1)y = 1$, when $y = Dy = D^2y = D^3y = 0$.

(10)(a) Solve $(D - 2)x - (D + 1)y = 6e^{3t}$

$$(2D - 3)x + (D - 3)y = 6e^{3t}, \quad x(0) = 3, y(0) = 0.$$

(or)

(b) Solve $\frac{dy}{dt} = 2 \frac{d^2y}{dx^2}$ if $y(0, t) = 0 = y(5, t), y(x, 0) = 10 \sin 4\pi$

(11)(a) Solve $\int_0^t \frac{F(u)du}{\sqrt{t-u}} = 1 + t + t^2$.

(or)

(b) Solve $F'(t) = t + \int_0^t F(t-u) \cos u \, du, \quad F(0) = 4$.

(12)(a) Find the fourier transform of $f(x) = \begin{cases} 1-x^2, & |x| < 1 \\ 0 & , |x| < 1 \end{cases}$ and hence

$$\text{evaluate } \int_0^\infty \left(\frac{x \cos x - \sin x}{x^3} \right) \cos \frac{x}{2} \, dx.$$

(or)

(b) Find the sine transform of $\frac{x}{1+x^2}$

(13)(a) Find the inverse Fourier transform of $\overline{f(s)} = e^{-|s|y}$

where y belongs to $(-\infty, \infty)$.

(or).

(b) Using Fourier integral formula, show that $e^{-x} \cos x$

$$= \frac{2}{\pi} \int_0^\infty \frac{(u^2 + 2) \cos ux}{u^4 + 4} \, du.$$



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B.A./B.Sc. THIRD YEAR MATHEMATICS SYLLABUS
SEMESTER – VI: PAPER – VIII-A-2
ELECTIVE – VIII-A-2: ADVANCED NUMERICAL ANALYSIS

60 Hrs

Unit – I (10 Hours)

Curve Fitting: Least – Squares curve fitting procedures, fitting a straight line, nonlinear curve fitting, Curve fitting by a sum of exponentials.

UNIT- II : (12 hours)

Numerical Differentiation: Derivatives using Newton's forward difference formula, Newton's backward difference formula, Derivatives using central difference formula, Stirling's interpolation formula, Newton's divided difference formula, Maximum and minimum values of a tabulated function.

UNIT- III : (12 hours)

Numerical Integration: General quadrature formula on errors, Trapezoidal rule, Simpson's 1/3 – rule, Simpson's 3/8 – rule, and Weddle's rules, Euler – Maclaurin Formula of summation and quadrature, The Euler transformation.

UNIT – IV: (14 hours)

Solutions of simultaneous Linear Systems of Equations: Solution of linear systems – Direct methods, Matrix inversion method, Gaussian elimination methods, Gauss-Jordan Method, Method of factorization, Solution of Tridiagonal Systems, Iterative methods. Jacobi's method, Gauss-Seidel method.

UNIT – V (12 Hours)

Numerical solution of ordinary differential equations: Introduction, Solution by Taylor's Series, Picard's method of successive approximations, Euler's method, Modified Euler's method, Runge – Kutta methods.

Reference Books :

1. Numerical Analysis by S.S.Sastry, published by Prentice Hall India (Latest Edition).
2. Numerical Analysis by G. Sankar Rao, published by New Age International Publishers, New – Hyderabad.
3. Finite Differences and Numerical Analysis by H.C Saxena published by S. Chand and Company, Pvt. Ltd., New Delhi.
4. Numerical methods for scientific and engineering computation by M.K.Jain, S.R.K.Iyengar, R.K. Jain.

Suggested Activities

Seminar/ Quiz/ Assignments

S. V UNIVERSITY., MODEL PAPER
THIRD YEAR . B. A, B. Sc, DEGREE EXAMINATIONS

SEMISTER . IV: CHOICE BASED CREDIT SYSTEM

PARTIII, MATHEMATICS

CLUSER ELECTIVE – VII – A – 2: ADVANCED NUMARICAL ANALYSIS

(NEW SYLLABUS W. E. F. 2015 – 16)

PART – A

Answer any five of the following questions $5 \times 5 = 25$.

(1) Certain experimental values of x & y are given bellow

x	0	2	5	7
y	-1	5	12	20

If " $a_0 + a_1x$ " find the approximation values of a_0 & a_1 +

(2) From the following table of values of x and y , obtain $\frac{dy}{dx}$ & $\frac{d^2y}{dx^2}$ for $x = 1.5$.

x	1.5	2.0	2.5	3.0	3.5	4.0
y	3.375	7.0	13.625	24.0	38.875	59.0

(3) Computethe first derivative for the following table of data $x = -3$ & $x = 0$

x	-3	-2	-1	0	1	2	3
y	-33	-12	-3	0	3	12	33

(4) Evaluate $\int_0^1 x^3 dx$ with five sub intervals by trapezoidal rule.

(5) Evaluate the integral $\int_4^{5.2} \log x dx$.

(6) Solve the equations $2x_1 + x_2 + x_3 = 10$, $3x_1 + 2x_2 + 3x_3 = 18$ and

$x_1 + 4x_2 + 9x_3 = 16$ using Gauss – elimination method.

(7) Solve the equations $10x + y + z = 12$, $2x + 10y + z = 13$ and $x + y + 5z = 7$

by Gauss – Jordan method.

(8) Find the values of y for $x = 0.4$ by picards method , given that $\frac{dy}{dx} = x^2 + y^2$,

$y(0) = 0$.


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PART - B

Answer all questions

$5 \times 10 = 50$

- (9)(a) Find the curve of best fit of the type $y = ae^x$ to the following data by the method of least squares

x	1	5	7	9	12
y	10	15	12	15	21

(or).

- (b) Fit a function of the form $Y = A_1 e^{\lambda_1 x} + A_2 e^{\lambda_2 x}$ to the data by using a sum of exponentials.

- (10)(a) Compute $f'(4)$ from the following table using Newton's divided difference formula.

x	1	2	4	8	10
y	0	1	5	21	27

(or)

- (b) Use Stirling's formula to find $f'(1.22)$ from the following table

x	1.0	1.1	1.2	1.3	1.4
y	0.84147	1.89121	0.93204	0.96356	0.98545

- (11)(a) Find the value of $\int_1^2 \frac{dx}{x}$ by Simpson's rule. Hence obtain approximate value of $\log_e 2$

(or)

- (b) Evaluate $I = \int_1^{\frac{\pi}{2}} \sin x \, dx$ using Euler's - MacLaurin's formula.

- (12)(a) Solve the following system by the method of factorization (Triangularization)

$$2x - 3y + 10z = 3, -x + 4y + 2z = 20 \text{ and } 5x + 2y + z = -12.$$

(or)

- (b) Solve the following system of equations by Jacobi & Gauss - Seidel methods

$$\text{correct to 3 - decimal places } x + y + 54z = 110, 27x + 6y - z = 35$$

$$\text{and } 6x + 15y + 2z = 72.$$

- (13)(a) Given $\frac{dy}{dx} = \frac{y-x}{y+x}$, $y(0) = 1$, compute $y(0.1)$ in steps of 0.02 using


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Eulers modified method.

(or).

(b) Use R – K method to evaluate $y(0.1)$ & $y(0.2)$ given that $y' = x + y$, $y(0) = 1$



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S. V UNIVERSITY., MODEL PAPER
THIRD YEAR . B. A, B. Sc, DEGREE EXAMINATIONS
SEMISTER . IV: CHOICE BASED CREDIT SYSTEM
PARTIII, MATHEMATICS
CLUSER ELECTIVE – VII – A – 3:PROJECT WORK
(NEW SYLLABUS W. E. F. 2015 – 16)

PROJECT WORK: 100MARKS


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PROJECT WORK

Project work in mathematics or in mathematics-related subjects is now very common, especially in applied or statistical topics. Everyone knows projects are generally beneficial to the students. To delve deeply into a topic of interest by finding and studying an article or part of a book on that topic and then writing a report, which should include some mathematical analysis and numerical computations. The project report and presentation make 20 percent of our course grade and more importantly, is our opportunity to learn about a concept of interest that involves some aspect of analysis.

Report guidelines: We take a project to be a substantial piece of written work (mini-thesis), in which the student has some element of choice over topic. The report should be roughly 15-20 pages, double-spaced, using word or some other appropriate format. There are individual assignments under the supervision of a member or staff. The report should include theoretical or computational significance in mathematics, but may also include less technical explanations and relevant historical or scientific background (who developed the method, why the method was developed, how its usage is, etc.).

Source: You should use at least two sources of information, which may include your text book, other books and scholarly articles. You should not rely on any website as a main source of information, but searching the web may help initially as an idea-generator to create interest on topics and for basic information.

Assessment: We have argued that depth of understanding, especially of proofs, plays a more central role in projects. For this reason we think the viva should be a required part of the assessment. The viva is also

needed to reward the student who has substantiated the topic in a material form, for example, the web, but used it logically and with understanding, and penalize the student who has lifted mindlessly. The main assessment of the written report, often supplemented by contributions from an oral presentation, along with a book of work progress, poster presentation etc.

For each selected problem, a good presentation of data would include.

- A description of the problem and numerical method.
- One table showing the errors resulting from all the different methods.
- One graph showing the numerical solutions.
- One graph showing the errors.
- A writeup explaining your results and analysis of what is happening with the different methods and why.
- A copy of your codes in the appendix.

For example: project name:Numerical differentiation and integration

Abstract:

Keywords:

Introduction:

We will normally evaluate the derivative or integral of a simple function by using calculus. When the functions are complicated, we have to apply some numerical techniques to obtain the approximate values for their derivatives and integrals.

Conclusion:

References:

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B. A. HISTORY
 III Year B. A. Programme (UG) Courses – Under CBCS
 Semester – VI
Paper – VII-(A) :: (Elective Paper)
HISTORY OF MODERN EUROPE (from 19th Century to 1945 A. D.)
(History of Modern World (1821 – 1945))

Unit – I	Industrial Revolution: Origin, Nature and Impact.
Unit – II	Unification Movements in Italy & Germany and their Impact.
Unit - III	Communist Revolution in Russia – Causes, Course and Results – Impact on World Order.
Unit - IV	World War I: Age of Rivalry in Europe Between 1870 and 1914 – Results of the War – Paris Peace Conference - League of Nations.
Unit – V	World War II: Causes, Fascism & Nazism – Results; The United Nations Organization: Structure, Functions and Challenges.

REFERENCES:

1	J.A.Hobson, Imperialism: A Study
2	C.D. Hazen, Modern Europe up to 1945
3	H.A.L.Fisher, History of Europe
4	C.M.M.Ketelbey, A History of Modern Times
5	Grant and Temperley (ed), Europe in the 18 th and 20 th Centuries
6	David Thomson, Europe Since Napoleon
7	A.P.J.Taylor, The Struggle for Mastery in Europe
8	S.P.Nanda, History of Modern World
9	S.N.Dhar, International Relations and World Politics Since 1919

Project Work: Project work on the consequences of industrialization & globalization on society and economy should be given to students.

MODEL PAPER -1

Three Year B.A. Programme (UG) Courses - Under CBCS

History (Core Paper VII - Semester VI)

History of Modern Europe 19th C. to 1945 A.D

Time :3 Hrs

Max.Marks : 75

PART - A

Answer any FIVE questions

5x5=25 M

UNIT - I

1. Reasons for mercantile revolution
వాణిజ్య విప్లవ ము రావడానికి గల కారణాలు తెలుపండి.
2. 1864 Danish war
1864 డానిష్ యుద్ధము
3. National Socialism of Stalin
స్టాలిన్ జాతీయ సామ్యవాదము
4. Formation of USSR
USSR ఏర్పాటు
5. Moracco Problem.
మొరాకో సమస్య
6. Zeniva Disarmament Summit.
జెనీవా నిరాయుధీకరణ సమావేశము
7. WHO
ప్రపంచ ఆరోగ్య సంస్థ
8. UNICEF
అంతర్జాతీయ బాలల నిధి.

SECTION - B

Answer all of the following questions

5x10=50M

9. (a) What is industrial revolution? Causes, results of it?
పారిశ్రామిక విప్లవం అనగా నేమి? దానికి గల కారణములు, ఫలితములు వివరింపుము.

(or)

- (b) Impact of industrial revlution on Asia, Africa?

ఆసియా మరియు ఆఫ్రికాలపై పారిశ్రామిక విప్లవ ప్రభావమును అంచనా వేయుము.

10. (a) Discuss the stages of Italy Unification

ఇటలీ ఏకీకరణలో వివిధ ఘట్టములను పేర్కొనము.

(or)

(b) Discuss the foreign policy of Bismark after the Unification of Germany?

జర్మనీ ఏకీకరణానంతరం బిస్మార్క్ అనుసరించిన విదేశాంగ విధానమును గురించి వివరించండి.

11 (a) Explain the role of Alexander II in Russian History?

జార్ రెండవ అలెగ్జాండర్ రష్యా చరిత్రలో గల స్థానము ఎట్టిది.

(or)

(b) Impact & Nature of Russian Revloution & 1917 on the World?

1917 రష్యా విప్లవ స్వభావం - ప్రపంచంపై దాని ప్రభావమును అంచనా వేయుము.

12 (a) Aims & Structure of the Non-Alingment Movement?

నానాజాతి సమితి ఆశయములు, నిర్మాణమును వివరింపుము.

(or)

(b) Discuss the security measures of France after World War - I.

మొదటి ప్రపంచయుద్ధానంతరం ఫ్రాన్స్ తన భద్రతకు చేసిన వివిధ ప్రయత్నా ఎట్టివి?

13 (a) What is Facism, its doctrine, evolution in Germany?

‘ఫాసిజం’ అనగా నేమి? దాని సిద్ధాంతాలు ఏవి? ఇటలీలో ఫాసిజం ఆవిర్భవించడానికి కారణాలు ఏవి? దాని ఉన్నతి, పతనం గురించి వ్రాయండి.

(or)

(b) World Economic Crisis in Europe.

ప్రపంచ ఆర్థిక మాంద్యం కారణాలు, పర్యవసానాలు ఎలా ఉన్నవి?

HISTORY

III Year B. A. Programme (UG) Courses – Under CBCS

Semester – VI

Paper – VIII-A-1 (Cluster Elective Paper –1)

CULTURAL TOURISM IN ANDHRA PRADESH

Unit – I	Concepts of Tourism: Nature – Scope – Definition – Tourists & Excursionists – Domestic & International Tourists.
Unit – II	Types of Tourism: Heritage Tourism – Pilgrimage Tourism - Recreation Tourism – Sports & Adventure Tourism - Advance Tourism – Health Tourism – Environment Tourism.
Unit - III	History and Tourism – Heritage Sites – Definition – Ancient Monuments Preservation Act of 1904, Act of 1958 and Act of 1972 - Archaeological Survey of India – Stage Museums.
Unit - IV	Planning and Development of A.P. Tourism: APTDC – Aims & Objectives – Fairs & Festivals – Andhra Cuisine –Restaurants - Eco Tourism – Beaches & Hill Resorts – Mountaineering – Tourist Places in A.P.
Unit – V	Modalities of Conducting Tourism: Field Work - Visit to a Site – Conduct of Research – Preparation of Project Report

References:

1	APTDC Publications
2	Ashorth G.J, Marketing in Tourism Industry
3	Bhatia A.K., Tourism Development
4	Clare, Gunn, Tourism Planning
5	Khan, Nafees A, Development Tourism in India
6	Krishna K Karama, Basics of Tourism
7	Marrison A.M, Hospitality and Travel Marketing
8	RangaMukesh, Tourism Potential in India
9	Sarkar H, Museums and Protection of Monuments and Antiquities in India
10	Vijayalaxmi K.S., History of Tourism

Field Trip: Compulsory field trip to destinations of architectural, archaeological, historical and cultural importance is to be conducted. Students should be made to prepare detailed reports on the hand-on experience they gained in such trips.

Students should be encouraged to create **blogs** for local site seeing places and to write and organize articles on those spots.

MODEL PAPER

Three Year B.A. Programme (UG) Courses - Under CBCS
IIIrd B.A. History Paper VIII (C) A-1 Semester VI (Cluster Elective - 1)
Cultural Tourism of Andhra Pradesh

Time :3 Hrs

Max.Marks : 75

PART - A

Answer any FIVE questions

5x5=25 M

UNIT - I

1. Tourism Scope
పర్యాటక రంగ పరిధి
2. T.T.D Temples
తిరుమల తిరుపతి ఆలయాలు
3. Health Tourism
వైద్య ఆరోగ్య పర్యాటకం
4. Beaches in Andhra
ఆంధ్ర రాష్ట్రంలోని బీచ్లు
5. Forts in Andhra
ఆంధ్ర రాష్ట్రంలోని కోటలు
6. Spiritual Centres
ఆధ్యాత్మిక పర్యాటక కేంద్రాలు
7. Summer Resorts
వేసవి విడిది కేంద్రాలు
8. UNESCO
యునెస్కో

SECTION - B

Answer all the following questions

5x10=50M

9. (a) Discuss the uses of Tourism studies?
పర్యాటకరంగములోని ప్రయోజనాలను వివరించండి?
- (or)
- (b) Discuss the Tourism Industries
పర్యాటక రంగ పరిశ్రమ గురించి వ్రాయండి?

10. (a) Discuss the Resources of Tourism in Andhra ?

ఆంధ్ర రాష్ట్రంలో పర్యాటక వనరులను గురించి వ్రాయండి.

(or)

(b) Spiritual Centres in Andhra Desham ?

ఆంధ్రలోని అధ్యాత్మిక పర్యాటక రంగం గురించి వ్రాయండి?

11 (a) Discuss the heritage and Preservation Act of 1904

పురాతన చారిత్రక కట్టడాల పరిరక్షణ చట్టం 1904 గురించి వ్రాయండి?

(or)

(b) Discuss archeological survey of India?

భారతదేశ పురావస్తు సర్వే (ఆర్కేలాజికల్ సర్వే) గురించి వ్రాయండి.

12 (a) Discuss the fairs and festivals in Andhradesh.

ఆంధ్ర రాష్ట్రంలో నిర్వహించే ఉత్సవాలు మరియు పండుగలు గురించి వ్రాయండి?

(or)

(b) Discuss the various Tourism Centres in Andhra?

ఆంధ్ర రాష్ట్రంలోని వివిధ పర్యాటక ప్రదేశాలను వివరింపుము?

13 (a) Discuss the Tourism Rules and Regulations?.

పర్యాటక రంగ ప్రవర్తన మరియు నియమాలు గురించి వ్రాయండి?

(or)

(b) Write about Andhra Pradesh Tourism Development Corporation ?

ఆంధ్ర ప్రదేశ్ టూరిజం కార్పొరేషన్ గురించి వ్రాయండి.

B. A. HISTORY
 III Year B. A. Programme (UG) Courses – Under CBCS
 Semester – VI
Paper – VIII-A-2 (Cluster Elective Paper 2)
POPULAR MOVEMENTS IN ANDHRA DESA (1848 TO 1956 A.D.)
(History and Culture of Andhra from 1857 to 2014)

Unit – I	Social & Self Respect Movements: Social Conditions –KandukuriVeeresalingam, Raghupathi Venkata Rathnam Naidu, GuruzadaApparao, Komarraju Venkata Laxmana Rao; New Literary Movements: Causes – RayaproluSubbarao, ViswanathaSathyanarayana, GurramJashua, BoyiBheemanna, SriSri – Impact.
Unit – II	Freedom Movement in Andhra (1885-1920): Contributory Factors – Vandemataram Movement – Swadeshi & Boycott programs – Glorious Events at Rajahmundry, Kakinada, Kotappakonda& Tenali – Home Rule Movement in Andhra.
Unit - III	Freedom Movement in Andhra (1920-1947): Non-Cooperation Movement – ChiralaPerala, Palanadu&Pedanandipadu Activities – Alluri Seetarama Raju &Rampa Revolt (1922-24) – Anti-Simon Commission Movement – Civil Disobedience Movement – Quit India Movement.
Unit - IV	Movement for Separate Andhra State (1953): Causes – Andhra Maha Sabha – Andhra Provincial Congress Committee – Andhra University – Conflict between Coastal Andhra &Rayalaseema – Sri Bagh Pact – Constitution of Committees & their Contribution – Martyrdom of PottiSriramulu – Formation of separate Andhra State.
Unit – V	Movement for formation of Andhra Pradesh (1956): VisalandhraMahasabha – Role of Communists – States Reorganization Committee – Gentlemen’s Agreement – Formation of Andhra Pradesh.

References:

1	B. Kesava Narayana, Political and Social Factors in Modern Andhra
2	K.V.Narayana Rao, The Emergence of Andhra Pradesh
3	M. Venkata Rangaiah, The Freedom Struggle in Andhra Pradesh
4	P.R.Rao, History of Modern Andhra
5	SarojiniRegani, Highlights of Freedom Movement
6	SarojiniRegani, ఆంధ్రలో స్వాతంత్ర్యోద్యమచరిత్ర
7	V. Ramakrishna, Social Reform Movement in Andhra
8	B. Kesava Narayana, Modern Andhra & Hyderabad – 1858 – 1956 A.D., 2016

Project Work: With the aim of understanding of techniques and methods of research and presentation, students should be encouraged to draft a report on local writers, struggles, human rights movements, different types of social discrimination etc.

MODEL PAPER

Three Year B.A. Programme (UG) Courses - Under CBCS

IIIrd B.A. History - Paper VIII (C) A-2 Semester VI(Cluster Elective-2)

Popular Movements in Andhra Desa (1848 to 1956 AD)

Time :3 Hrs

Max.Marks : 75M

PART - A

Answer any FIVE questions

5x5=25 M

UNIT - I

1. Adi Andhra Movement

ఆది ఆంధ్ర ఉద్యమం

2. Vishvanatha Satyanarayana

విశ్వనాథ సత్యనారాయణ

3. K.V.Laxmana Rao

కొమర్రాజు వేంకట లక్ష్మణరావు

4. Gurajada Appa Rao

గురుజాడ అప్పారావు

5. Andhra Home Rule Movement

ఆంధ్రాలో హోమ్ రూల్ ఉద్యమం

6. Rampa Rebellion.

రంపా విప్లవం

7. Anti - Simon Commission movement in Andhra

ఆంధ్రాలో సైమన్ కమిషన్ వ్యతిరేక ఉద్యమం

8. Potti Sri Ramulu

శ్రీ పొట్టి శ్రీరాములు

SECTION - B

Answer all the following questions

5x10=50M

9. (a) Social & Literary Contribution of K.V.Panthulu.

కందుకూరి విరేశలింగం చేసిన సాంఘిక మరియు సాహిత్య సేవలను వివరింపుము.

(or)

(b) Discuss the Non-Brahmana Movement?

ఆంధ్రాలో సాగిన బ్రాహ్మణేతర ఉద్యమం లేక ఆత్మ గౌరవ ఉద్యమం గూర్చి వ్రాయుము.

10. (a) Discuss the role of New Literary Movement in Andhra?

ఆంధ్ర సాహిత్యంలో నూతన భావోద్యమమునకు గల కారణములను విశదీకరించండి.

(or)

(b) Discuss the role of Andhra Nationalism?

ఆంధ్ర దేశంలో జాతీయతా భావము జనించుటకు దోహదం చేసిన పరిస్థితులను వివరింపుము.

11 (a) Role of Vande Matharam Movement in Andhra?

ఆంధ్రాలో సాగిన వందేమాతర ఉద్యమమును గూర్చి వ్రాయుము.

(or)

(b) Non-Cooperation movement in Andhra?

ఆంధ్రాలో సహాయ నిరాకరణోద్యమంలో గల వివిధ దశలను వివరింపుము?

12 (a) Civil - Disobedience movement in Andhra between 1930-34?

1930- 34 సంవత్సర మధ్యకాలంలో ఆంధ్రాలో సాగిన శాసనోల్లంఘనోద్యమమును సమీక్షించండి.

(or)

(b) Quit India Movement in A.P.?

ఆంధ్రప్రదేశ్ లో క్విట్ ఇండియా ఉద్యమం గూర్చి వ్రాయుము.

13 (a) Write the Formation of Andhra State?

ఆంధ్ర రాష్ట్రము ఏర్పడిన విధానమును వివరింపుము.

(or)

(b) How did Andhra Pradesh Form?

ఆంధ్రప్రదేశ్ ఎట్లు ఆవిర్భవించెను.

B. A. HISTORY
III Year B. A. Programme (UG) Courses – Under CBCS
Semester – VI

Paper – VIII-A-3 (Cluster Elective Paper – 3)
COMTEMPORARY HISTORY OF ANDHRA PRADESH (1956-2014)

Unit – I	Socio-Economic Changes in Andhra Pradesh – River Projects & Infrastructural Development – Education & Scientific Progress – Regional Politics – Emergence of Telugu Desam Party.
Unit – II	Growth of Leftist Ideology – Marxist & Radical Literature – Naxalbari Movement - Communist Activities - Electoral Politics – Present Status of Communist Movement.
Unit - III	Dalit Movement – Understanding Untouchability - Education – Literature - Struggle for Identity – Demand for Political Space.
Unit - IV	Early trends towards Bifurcation: Jai Telangana Movement (1969) – Mulki Rules – Legal Battle - Jai Andhra Movement (1972) – Six Point Formula (1973).
Unit – V	Bifurcation of Andhra Pradesh: Power Politics – Economic Discontentment – Riparian Disputes - Unemployment –Foundation of Telangana RastraSamiti – Movements for separate Telangana & unified Andhra Pradesh – Formation of Telangana State (2014)

REFERENCES:

1	Barry Pavier, The Telangana Movement - 1944-51
2	Chinnayya Suri, Agrarian Movement in Andhra, 1921-71
3	K. Ramachandra Murthy, Unveiling Telangana State
4	P.R.Rao, History of Modern Andhra
5	S. Ratnakar, A Brief History of Telangana & Andhra Pradesh
6	Sri Krishna Committee Report
7	TarimelaNagireddy, India Mortgaged
8	Y.V.Krishna Rao, Growth of Capitalism in Indian Agriculture: A Case Study of A.P.
9	KattiPadmarao, దళితదర్శనం
10	Y. Chinnarao, దళితఉద్యమచరిత్ర
11	News Paper Clippings (2001-2014)

Project Work: Students may be asked to prepare assignments on local caste struggles; regional disparities; aspirations; recent developments etc., through interviews and verifying press reports.

MODEL PAPER

Three Year B.A. Programme (UG) Courses - Under CBCS

IIIrd B.A. History Paper VIII (C) A-3 Semester VI (Cluster Elective -3)

Contemporary History of Andhra Pradesh (1956 - 2014)

Time :3 Hrs

Max.Marks : 75

PART - A

Answer any FIVE questions

5x5=25 M

UNIT - I

1. Naxalbari Movement
నక్సల్బారి ఉద్యమం.
2. Communist Movement
కమ్యూనిస్ట్ ఉద్యమం.
3. Six Point Programme - 1973
6 అంశాల పథకం 1973.
4. Jai telangana Movement
జై తెలంగాణ ఉద్యమం 1969.
5. Jai Andhra Movement
జై ఆంధ్రా ఉద్యమం 1972.
6. Telangana Rastra Samithi
తెలంగాణ రాష్ట్ర సమితి.
7. Telangana Formation - 2014
తెలంగాణ ఏర్పాటు ఉద్యమం - 2014.
8. Andhra Pradesh Unity Movement
ఆంధ్రప్రదేశ్ ఐక్య ఉద్యమం.

SECTION - B

Answer all the following questions

5x10=50M

9. (a) Discuss the River Valley and infrastructure development in A.P.
ఆంధ్రప్రదేశ్‌లో నదీ వ్యవస్థ మరియు మౌలిక సదుపాయాల అభివృద్ధిని వివరింపుము.

(or)

- (b) Discuss the reasons for arise of T.D.P
తెలుగుదేశం పార్టీ ఆవిర్భావానికి దారితీసిన పరిస్థితులను వివరింపుము.

10. (a) What led for the leftist movement in A.P.

ఆంధ్ర ప్రదేశ్ వామపక్ష ఉద్యమ అభివృద్ధికి దారితీసిన పరిస్థితులను వివరింపుము.

(or)

(b) What led for the communist movement in A.P.

ఆంధ్రప్రదేశ్ లో కమ్యూనిస్ట్ ఉద్యమం ప్రస్తుతం ఉన్న తీరును వివరింపుము.

11 (a) Dalit Movement in Andhra

ఆంధ్రప్రదేశ్ లో దళిత ఉద్యమం గూర్చి వ్రాయుము.

(or)

(b) Naxatbari Movement in A.P

ఆంధ్రప్రదేశ్ విభజనకై జరిగిన తొలి ప్రయత్నములను వివరింపుము.

12 (a) The initial movement for the Division of A.P.

ఆంధ్రప్రదేశ్ విభజనకై జరిగిన తొలి ప్రయత్నములను వివరింపుము.

(or)

(b) What were the reasons for formation of TRS.

తెలంగాణ రాష్ట్ర సమితి ఏర్పాటుకు దారితీసిన పరిస్థితులను వివరింపుము.

13 (a) Discuss the movements arise for TS & AP states.

తెలంగాణా ఏర్పాటు మరియు ఆంధ్రప్రదేశ్ ఏర్పాటుకు జరిగిన ఉద్యమములను గూర్చి వ్రాయుము.

(or)

(b) Discuss what led for the Emergence of TS.

తెలంగాణా ఆవిర్భావానికి దారితీసిన కారణములను గురించి వ్రాయుము.

Andhra Pradesh State Council of Higher Education
B.Sc. PHYSICS SYLLUBUS UNDER CBCS
w.e.f. 2015-16 (Revised in April 2016)

First Semester

Paper I : Mechanics & Properties of Matter
Practical I (Lab-1)

Second Semester

Paper II: Waves & Oscillations
Practical 2 (Lab2)

Third Semester

Paper III: Wave Optics
Practical 3. (Lab 3)

Fourth Semester

Paper IV: Thermodynamics & Radiation Physics
Practical 4.(Lab 4)

Fifth Semester

Paper V: Electricity, Magnetism & Electronics
Paper VI: Modern Physics
Practical 5.(Lab 5)
Practical 6.(Lab 6)

Sixth Semester

Paper VII: Elective (One)
Paper VIII: Cluster Electives (Three)
Practical 7 (Lab 7)
Practical 8 (Lab 8)

Proposed Electives in Semester - VI

Paper – VII (one elective is to be chosen from the following)

Paper VII-(A): Analog and Digital Electronics
Paper VII-(B): Materials Science
Paper VII-(C): Renewable Energy

Paper – VIII (one cluster of electives (A-1,2,3 or B-1,2,3 or C-1,2,3) to be chosen *preferably* relating to the elective chosen under paper – VII (A or B or C)



Cluster 1

Paper VIII-A-1. Introduction to Microprocessors and Microcontrollers

Paper VIII-A-2. Computational Physics and Programming

Paper VIII-A-3. Electronic Instrumentation

Cluster 2

Paper VIII-B-1. Fundamentals of Nanoscience

Paper VIII-B-2. Synthesis and Characterization of Nanomaterials

Paper VIII-B-3. Applications of Nanomaterials and Devices

Cluster 3

Paper VIII-C-1. Solar Thermal and Photovoltaic Aspects

Paper VIII-C-2. Wind, Hydro and Ocean Energies

Paper VIII-C-3. Energy Storage Devices

NOTE: Problems should be solved at the end of every chapter of all Units.

1. Each theory paper is of 100 marks and practical paper is also of 50 marks.

Each theory paper is 75 marks University Exam (external) + 25 marks mid Semester Exam (internal). Each practical paper is 50 marks external

2. The teaching work load per week for semesters I to VI is 4 hours per paper for theory And 2 hours for all laboratory (practical) work.

3. The duration of the examination for each theory paper is 3.00 hrs.

4. The duration of each practical examination is 3 hrs with 50 marks, which are to be distributed as 30 marks for experiment

10 marks for viva

10 marks for record

Practicals

Formula & Explanation

50 marks

6

Tabular form + graph + circuit diagram

6

Observations

12

Calculation, graph, precautions & Result

6

Viva-Voce

10

Record

10

*****NOTE: Practical syllabus is same for both Mathematics and Non Mathematics combinations**



B.Sc. (Physics) (Maths Combinations)
Scheme of instruction and examination to be followed w.e.f. 2015-2016

S. No	Semester	Title of the paper	Instruction hrs/week	Duration of exam(hrs)	Max Marks (external)
Theory					
1	First	Paper I: Mechanics & Properties of Matter	4	3	75
2	Second	Paper II: Waves & Oscillations	4	3	75
3	Third	Paper III: Wave Optics	4	3	75
4	Fourth	Paper IV: Thermodynamics & Radiation Physics	4	3	75
5	Fifth	Paper V: Electricity, Magnetism & Electronics	4	3	75
		Paper VI: Modern Physics	4	3	75
6	Sixth	Paper VII: Elective (One)	4	3	75
		Paper VIII: Cluster Electives (Three)	4	3	75
Practicals					
1	First	Practical I	2	3	50
2	Second	Practical II	2	3	50
3	Third	Practical III	2	3	50
4	Fourth	Practical IV	2	3	50
5	Fifth	Practical V	2	3	50
6		Practical VI	2	3	50
7	Sixth	Practical VII	2	3	50
8		Practical VIII	2	3	50

Model question Paper for all theory papers

Time : 3 hrs

Max marks: 75

Section-A (Essay type)

Answer All questions with internal choice from all units Marks: $10 \times 5 = 50$
(Two questions are to be set from each unit with either or type)

Section-B (Short answer type)

Answer any three out of 5 questions from all units (I to V) Marks: $5 \times 3 = 15$
At least one question should be set from each unit.

Section-C

Answer any two out of 5 questions set from all units Marks: $5 \times 2 = 10$



Paper VII-(B) Elective (Materials Science)

Semester –VI
Elective Paper –VII-(B): Materials Science

No. of Hours per week: 04

Total Lectures:60

UNIT-I (12 hrs)

1. Materials and Crystal Bonding: Materials, Classification, Crystalline, Amorphous, Glasses; Metals, Alloys, Semiconductors, Polymers, Ceramics, Plastics, Bio-materials, Composites, Bulk and nanomaterials. Different types of chemical bonds – Ionic covalent bond or homopolar bond – Metallic bond – Dispersion bond – Dipole bond – Hydrogen bond – Binding energy of a crystal.

UNIT-II (12 hrs)

2. Defects and Diffusion in Materials: Introduction – Types of defects - Point defects- Line defects- Surface defects- Volume defects- Production and removal of defects- Deformation- irradiation- quenching- annealing- recovery. Diffusion in solids- Fick's laws of diffusion.

UNIT-III(12 hrs)

3. Mechanical Behavior of Materials: Different mechanical properties of engineering materials – Creep – Fracture – Technological properties – Factors affecting mechanical properties of a material – Heat treatment - Cold and hot working – Types of mechanical tests – Deformation of metals.

UNIT-IV (12 hrs)

4. Magnetic Materials: Dia-, Para-, Ferri- and Ferromagnetic materials, Classical Langevin theory of dia magnetism. Curie's law, Weiss's theory of ferromagnetism, Ferromagnetic domains. Discussion of B-H Curve. Hysteresis and energy Loss.

UNIT-V (12 hrs)

5. Dielectric Materials: Dielectric constant, dielectric strength and dielectric loss, polarizability, mechanism of polarization, factors affecting polarization, polarization curve and hysteresis loop, types of dielectric materials, applications; ferroelectric, piezoelectric and pyroelectric materials, Clausius -Mosotti equation.

Reference books

1. Materials Science by M. Arumugam, Anuradha Publishers. 1990, Kumbakonam.
2. Materials Science and Engineering V. Raghavan, Printice Hall India Ed. V 2004. New Delhi.
3. Elementary Solid State Physics, 1/e M. Ali Omar, 1999, Pearson India
4. Solid State Physics, M.A. Wahab, 2011, Narosa Publications



Minimum of 6 experiments to be done and recorded

1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)
2. Measurement of magnetic susceptibility of solids.
3. Determination of coupling coefficient of a piezoelectric crystal.
4. Measurement of the dielectric constant of a dielectric Materials
5. Study the complex dielectric constant and plasma frequency of metal using surface Plasmon resonance (SPR)
7. Study the hysteresis loop of a Ferroelectric Crystal.
8. Study the B-H curve of 'Fe' using solenoid and determine energy loss from hysteresis.
9. Energy gap of a metaloxide semiconductor (thermistor).
10. Determination of activation energy using creep method.
11. Determination of crystallite size of given polycrystalline materials using x-ray diffractogram.

Semester –VI: Cluster Electives – VIII-B
Cluster Elective Paper VIII-B-1: Fundamentals of Nanoscience

No. of Hours per week: 04

Total Lectures: 60

UNIT-I (12hrs)

1. Background and history: Emergence of Nanoscience with special reference to Feynman and Drexler; Role of particle size; Spatial and temporal scale; Concept of confinement, strong and weak confinement with suitable example; Development of quantum structures, Basic concept of quantum well, quantum wire and quantum dot.

Size dependence of properties, crystal structures, Lattice vibrations, Energy bands:- Insulators Semiconductors and conductors.

UNIT-II (12hrs)

2. Classification of Nanomaterials: Inorganic nanomaterials: carbon nanotubes and cones, Organic nanomaterials: dendrimers, micelles, liposomes, block copolymers; Bionanomaterials: Biomimetic, bioceramic and nanotherapeutics; Nanomaterials for molecular electronics and optoelectronics.

UNIT-III (12hrs)

3. Macromolecules: Classification of polymers, chemistry of polymerization, chain polymerization, step polymerization, coordination polymerization. Molecular weight of polymers-number average and weight average molecular weight, degree of polymerization, determination of molecular weight of polymers by viscometry. Preparation and application of polyethylene, PVC, Teflon.



UNIT-IV (12hrs)

4. Molecular & Nanoelectronics: Semiconductors, Transition from crystal technology to nanotechnology. Tiny motors, Gyroscopes and accelerometers. Nano particle embedded wrinkle resistant cloth, Transparent Zinc Oxide sun screens. Bio-systems, Nanoscale processes in environment. Nanoscale structures and quantum computing. Single electron transistors.

UNIT-V (12hrs)

5. Biomaterials: Implant materials: Stainless steels and its alloys, Ti and Ti based alloys, Ceramic implant materials; Hydroxyapatite glass ceramics, Carbon Implant materials, Polymeric Implant materials, Soft tissue replacement implants, Sutures, Surgical tapes and adhesives, heart valve implants, Artificial organs, Hard Tissue replacement Implants, Internal Fracture Fixation Devices, Wires, Pins, and Screws, Fracture Plates.

Reference Books

1. T. Pradeep: Textbook of Nanoscience and Nanotechnology Chapter (McGraw-Hill Professional, 2012), Access Engineering.
2. C. N. R. Rao, A. Müller, A. K. Cheetham, “The Chemistry of Nanomaterials :Synthesis, Properties and Applications”, Wiley-VCH, 2006.
3. C. Breachignac P. Houdy M. Lahmani, “Nanomaterials and Nanochemistry”, Springer, 2006.
4. Guozhong Cao, “Nanostructures and Nanomaterials: Synthesis, Properties, and Applications”, World Scientific Publishing Private, Ltd., 2011.
5. Zhong Lin Wang, “Characterization of Nanophase Materials”, Wiley-VCH, 2004.
6. Carl C. Koch, “Nanostructured Materials: Processing, Properties and Potential Applications”, William Andrew Publishing Norwich, 2006.

Elective Paper- VIII-B-1: Practical: Fundamentals of Nanoscience

2hrs/Week

A project based on any of the concepts of Fundamentals of Nanoscience covered in the theory paper (VIII-B-1)



Semester –VI
Cluster Elective Paper –VIII-B-2: Synthesis and Characterization of
Nanomaterials

No. of Hours per week: 04

Total Lectures: 60

Unit-I (12 hrs)

1. Nanomaterials synthesis: Synthesis and nanofabrication, Bottom-Up and Top-Down approach with examples. Chemical precipitation methods, sol-gel method, chemical reduction, hydrothermal, process. Physical Methods- ball milling, Physical Vapour deposition (PVD), Sputtering, Chemical Vapor deposition (CVD), spray pyrolysis, Biological methods- Synthesis using micro organisms and bacteria, Synthesis using plant extract.

Unit-II (12 hrs)

2. Classification of materials: Types of materials, Metals, Ceramics (Sand glasses) polymers, composites, semiconductors. Metals and alloys- Phase diagrams of single component, binary and ternary systems, diffusion, nucleation and growth. Mechanical properties. Metallic glasses. Preparation, structure and properties like electrical, magnetic, thermal and mechanical, applications.

UNIT-III (12 hrs)

3. Glasses: The glass transition - theories for the glass transition, Factors that determine the glass-transition temperature. Glass forming systems and ease of glass formation, preparation of glass materials. Applications of Glasses: Introduction: Electronic applications, Electrochemical applications, optical applications, Magnetic applications.

UNIT-IV (12 hrs)

4. Liquid Crystals: Mesomorphism of anisotropic systems, Different liquid crystalline phase and phase transitions, Thermal and electrical properties of liquid crystals, Types Liquid Crystals displays, few applications of liquid crystals.

UNIT-V (12 hrs)

5. Characterization Methods: XRD, SEM, TEM, AFM, XPS and PL characterization techniques for nano materials. Electrical and mechanical properties, Optical properties by IR and Raman Spectroscopy.

References books

1. Encyclopedia of Nanotechnology by M.Balakrishna Rao and K.Krishna Reddy, Vol.I to X, Campus books.
2. Nano: The Essentials-Understanding Nanoscience & Nanotechnology by T.Pradeep; Tata Mc. Graw Hill
3. Nanotechnology in Microelectronics & Optoelectronics, J.M Martine Duarte, R.J Martin Palma, F. Agullo Rueda, Elsevier
4. Nanoelectronic Circuit Design, N.K Jha, D Chen, Springer
5. Handbook of Nanophysics- Nanoelectronics & Nanophotonics, K.D Sattler, CRC Press
6. Organic Electronics-Sensors & Biotechnology- R. Shinar & J. Shinar, McGraw-Hill.



Cluster Elective Paper- VIII-B-2: Practical: Synthesis and Characterization of Nanomaterials **2hrs/Week**

Minimum of 6 experiments to be done and recorded

1. Synthesis of nanocrystalline films of II-VI compounds doped with rare earths by chemical process.
2. Synthesis of Alkaline earth aluminates in nanocrystalline form by combustion synthesis.
3. Preparation of surface conducting glass plate by spray pyrolysis method
4. Preparation of surface conducting glass plate by chemical route
5. Fabrication of micro fluidic nanofilter by polymerisation reaction
6. Absorption studies on the nanocrystalline films and determination of absorption coefficient.
7. Determination of band gap from the absorption spectra using Tauc's plots.
8. Study of Hall effect in semiconductors and its application in nanotechnology.
9. Measurement of electrical conductivity of semiconductor film by Four Probe method and study of temperature variation of electrical conductivity.
10. Determination of the Band Gap of Semiconductor Nanoparticles.

Semester –VI
Cluster Elective Paper –VIII-B-3: Applications of Nanomaterials and Devices

No. of Hours per week: 04

Total Lectures: 60

UNIT-I (12 hrs)

1. Optical properties: Coulomb interaction in nanostructures. Concept of dielectric constant for nanostructures and charging of nanostructure. Quasi-particles and excitons. Excitons in direct and indirect band gap semiconductor nanocrystals. Quantitative treatment of quasi-particles and excitons, charging effects. Radiative processes: General formalization-absorption, emission and luminescence. Optical properties of heterostructures and nanostructures.

UNIT-II (12 hrs)

2. Electrical transport:

Carrier transport in nanostructures. Hall effect, determination of carrier mobility and carrier concentration; Coulomb blockade effect, thermionic emission, tunneling and hopping conductivity. Defects and impurities: Deep level and surface defects.

UNIT-III (12 hrs)

3. Applications: Applications of nanoparticles, quantum dots, nanowires and thin films for photonic devices (LED, solar cells). Single electron transfer devices (no derivation). CNT based transistors. Nanomaterial Devices: Quantum dots heterostructures lasers, optical switching and optical data storage. Magnetic quantum well; magnetic dots - magnetic data storage. Micro Electromechanical Systems (MEMS), Nano Electromechanical Systems (NEMS).



UNIT-IV(12 hrs)

4. Nanoelectronics: Introduction, Electronic structure of Nanocrystals, Tuning the Band gap of Nanoscale semiconductors, Excitons, Quantum dot, Single electron devices, Nanostructured ferromagnetism, Effect of bulk nanostructuring of magnetic properties, Dynamics of nanomagnets, Nanocarbon ferromagnets, Giant and colossal magneto-resistance, Introduction of spintronics, Spintronics devices and applications.

UNIT-V (12 hrs)

5. Nanobiotechnology and Medical application: Introduction, Biological building blocks- size of building blocks and nanostructures, Peptide nanowires and protein nanoparticles, DNA double nanowires, Nanomaterials in drug delivery and therapy, Nanomedicine, Targeted gold nanoparticles for imaging and therapy.

Reference books:

- 1.C.P. Poole, Jr. Frank J. Owens, Introduction to Nanotechnology (Wiley India Pvt. Ltd.).
- 2.S.K. Kulkarni, Nanotechnology: Principles & Practices (Capital Publishing Company).
3. K.K. Chattopadhyay and A.N. Banerjee, Introduction to Nanoscience & Technology (PHI Learning Private Limited).
4. Richard Booker, Earl Boysen, Nanotechnology (John Wiley and Sons).

Cluster Elective Paper-VIII-B-3: Practical: Applications of Nanomaterials and Devices 2hrs/Week

Minimum of 6 experiments to be done and recorded

1. Synthesis of metal nanoparticles by chemical route.
2. Synthesis of semiconductor nanoparticles.
3. Surface Plasmon study of metal nanoparticles by UV-Visible spectrophotometer.
4. XRD pattern of nanomaterials and estimation of particle size.
5. To study the effect of size on color of nanomaterials.
6. Prepare a disc of ceramic of a compound using ball milling, pressing and sintering, and study its XRD.
7. Fabricate a thin film of nanoparticles by spin coating (or chemical route) and study transmittance spectra in UV-Visible region.
8. Fabricate a pn-diode by diffusing Al over the surface of n-type Si and study its I-V characteristics.



B.Sc. (Physics) (Non-Mathematics Combinations)
Scheme of instruction and examination to be followed w.e.f. 2016-2017

S.No	Semester	Title of the paper	Instruction Hrs/week	Duration o f exam (hrs)	Max Marks (external)
Theory					
1	First	Paper I: Mechanics & Properties of Matter	4	3	75
2	Second	Paper II: Waves & Oscillations	4	3	75
3	Third	Paper III: Optics	4	3	75
4	Fourth	Paper IV: Thermodynamics & Radiation Physics	4	3	75
5	Fifth	Paper V: Electricity, Magnetism & electronics	4	3	75
		Paper VI: Modern Physics & Medical Physics	4	3	75
6	Sixth	PaperVII : Elective	4	3	75
		Paper VIII: Cluster Electives	4	3	75
Practical					
1	First	Practical 1	2	3	50
2	Second	Practical II	2	3	50
3	Third	Practical III	2	3	50
4	Fourth	Practical IV	2	3	50
5	Fifth	Practical V	2	3	50
6		Practical VI	2	3	50
7	Sixth	Practical VII	2	3	50
8		Practical VIII	2	3	50

B.Sc. Physics under CBCS for Non-Mathematics Combinations
w.e.f. 2015-16 (Revised in April, 2016)

Paper VII-(B) Elective (Materials Science)
Semester –VI
Elective Paper –VII-(B): Materials Science

No. of Hours per week: 04

Total Lectures:60

UNIT-I (12 hrs)

1. Materials and Crystal Bonding: Materials, Classification, Crystalline, Amorphous, Glasses; Metals, Alloys, Semiconductors, Polymers, Ceramics, Plastics, Bio-materials, Composites, Bulk and nanomaterials. Different types of chemical bonds – Ionic covalent bond or homopolar bond – Metallic bond – Dispersion bond – Dipole bond – Hydrogen bond – Binding energy of a crystal.

UNIT-II (12 hrs)

2. Defects and Diffusion in Materials: Introduction – Types of defects - Point defects- Line defects- Surface defects- Volume defects- Production and removal of defects- Deformation- irradiation- quenching- annealing- recovery. Diffusion in solids- Fick's laws of diffusion.

UNIT-III(12 hrs)

3. Mechanical Behavior of Materials: Different mechanical properties of engineering materials – Creep – Fracture – Technological properties – Factors affecting mechanical properties of a material – Heat treatment - Cold and hot working – Types of mechanical tests – Deformation of metals.

UNIT-IV (12 hrs)

4. Magnetic Materials: Dia-, Para-, Ferri- and Ferromagnetic materials, Classical Langevin theory of dia magnetism. Curie's law, Weiss's theory of ferromagnetism, Ferromagnetic domains. Discussion of B-H Curve. Hysteresis and energy Loss.

UNIT-V (12 hrs)

5. Dielectric Materials: Dielectric constant, dielectric strength and dielectric loss, polarizability, mechanism of polarization, factors affecting polarization, polarization curve and hysteresis loop, types of dielectric materials, applications; ferroelectric, piezoelectric and pyroelectric materials, Clausius -Mosotti equation.

Reference books

1. Materials Science by M. Arumugam, Anuradha Publishers. 1990, Kumbakonam.
2. Materials Science and Engineering V. Raghavan, Printice Hall India Ed. V 2004. New Delhi.
3. Elementary Solid State Physics, 1/e M. Ali Omar, 1999, Pearson India
4. Solid State Physics, M.A. Wahab, 2011, Narosa Publications



Elective Paper-VII-B Practical: Materials Science**2hrs/Week**

Minimum of 6 experiments to be done and recorded

1. Measurement of susceptibility of paramagnetic solution (Quinck's Tube Method)
2. Measurement of magnetic susceptibility of solids.
3. Determination of coupling coefficient of a piezoelectric crystal.
4. Measurement of the dielectric constant of a dielectric Materials
5. Study the complex dielectric constant and plasma frequency of metal using surface Plasmon resonance (SPR)
7. Study the hysteresis loop of a Ferroelectric Crystal.
8. Study the B-H curve of 'Fe' using solenoid and determine energy loss from hysteresis.
9. Energy gap of a metaloxide semiconductor (thermistor).
10. Determination of activation energy using creep method.
11. Determination of crystallite size of given polycrystalline materials using x-ray diffractogram.

Semester –VI: Cluster Electives – VIII-B**Cluster Elective Paper VIII-B-1: Fundamentals of Nanoscience****No. of Hours per week: 04****Total Lectures: 60**

UNIT-I (12hrs)

1. Background and history: Emergence of Nanoscience with special reference to Feynman and Drexler; Role of particle size; Spatial and temporal scale; Concept of confinement, strong and weak confinement with suitable example; Development of quantum structures, Basic concept of quantum well, quantum wire and quantum dot.

Size dependence of properties, crystal structures, Lattice vibrations, Energy bands:- Insulators Semiconductors and conductors.

UNIT-II (12hrs)

2. Classification of Nanomaterials: Inorganic nanomaterials: carbon nanotubes and cones, Organic nanomaterials: dendrimers, micelles, liposomes, block copolymers; Bionanomaterials: Biomimetic, bioceramic and nanotherapeutics; Nanomaterials for molecular electronics and optoelectronics.

UNIT-III (12hrs)

3. Macromolecules: Classification of polymers, chemistry of polymerization, chain polymerization, step polymerization, coordination polymerization. Molecular weight of polymers-number average and weight average molecular weight, degree of polymerization, determination of molecular weight of polymers by viscometry. Preparation and application of polyethylene, PVC, Teflon.



UNIT-IV (12hrs)

4. Molecular & Nanoelectronics: Semiconductors, Transition from crystal technology to nanotechnology. Tiny motors, Gyroscopes and accelerometers. Nano particle embedded wrinkle resistant cloth, Transparent Zinc Oxide sun screens. Bio-systems, Nanoscale processes in environment. Nanoscale structures and quantum computing. Single electron transistors.

UNIT-V (12hrs)

5. Biomaterials: Implant materials: Stainless steels and its alloys, Ti and Ti based alloys, Ceramic implant materials; Hydroxyapatite glass ceramics, Carbon Implant materials, Polymeric Implant materials, Soft tissue replacement implants, Sutures, Surgical tapes and adhesives, heart valve implants, Artificial organs, Hard Tissue replacement Implants, Internal Fracture Fixation Devices, Wires, Pins, and Screws, Fracture Plates.

Reference Books

1. T. Pradeep: Textbook of Nanoscience and Nanotechnology Chapter (McGraw-Hill Professional, 2012), Access Engineering.
2. C. N. R. Rao, A. Müller, A. K. Cheetham, “The Chemistry of Nanomaterials :Synthesis, Properties and Applications”, Wiley-VCH, 2006.
3. C. Breachignac P. Houdy M. Lahmani, “Nanomaterials and Nanochemistry”, Springer, 2006.
4. Guozhong Cao, “Nanostructures and Nanomaterials: Synthesis, Properties, and Applications”, World Scientific Publishing Private, Ltd., 2011.
5. Zhong Lin Wang, “Characterization of Nanophase Materials”, Wiley-VCH, 2004.
6. Carl C. Koch, “Nanostructured Materials: Processing, Properties and Potential Applications”, William Andrew Publishing Norwich, 2006.

Elective Paper- VIII-B-1: Practical: Fundamentals of Nanoscience

2hrs/Week

A project based on any of the concepts of Fundamentals of Nanoscience covered in the theory paper (VIII-B-1)



Semester –VI
Cluster Elective Paper –VIII-B-2: Synthesis and Characterization of
Nanomaterials

No. of Hours per week: 04

Total Lectures: 60

Unit-I (12 hrs)

1. Nanomaterials synthesis: Synthesis and nanofabrication, Bottom-Up and Top-Down approach with examples. Chemical precipitation methods, sol-gel method, chemical reduction, hydrothermal, process. Physical Methods- ball milling, Physical Vapour deposition (PVD), Sputtering, Chemical Vapor deposition (CVD), spray pyrolysis, Biological methods- Synthesis using micro organisms and bacteria, Synthesis using plant extract.

Unit-II (12 hrs)

2. Classification of materials: Types of materials, Metals, Ceramics (Sand glasses) polymers, composites, semiconductors. Metals and alloys- Phase diagrams of single component, binary and ternary systems, diffusion, nucleation and growth. Mechanical properties. Metallic glasses. Preparation, structure and properties like electrical, magnetic, thermal and mechanical, applications.

UNIT-III (12 hrs)

3. Glasses: The glass transition - theories for the glass transition, Factors that determine the glass-transition temperature. Glass forming systems and ease of glass formation, preparation of glass materials. Applications of Glasses: Introduction: Electronic applications, Electrochemical applications, optical applications, Magnetic applications.

UNIT-IV (12 hrs)

4. Liquid Crystals: Mesomorphism of anisotropic systems, Different liquid crystalline phase and phase transitions, Thermal and electrical properties of liquid crystals, Types Liquid Crystals displays, few applications of liquid crystals.

UNIT-V (12 hrs)

5. Characterization Methods: XRD, SEM, TEM, AFM, XPS and PL characterization techniques for nano materials. Electrical and mechanical properties, Optical properties by IR and Raman Spectroscopy.

References books

1. Encyclopedia of Nanotechnology by M.Balakrishna Rao and K.Krishna Reddy, Vol.I to X, Campus books.
2. Nano: The Essentials-Understanding Nanoscience & Nanotechnology by T.Pradeep; Tata Mc. Graw Hill
3. Nanotechnology in Microelectronics & Optoelectronics, J.M Martine Duart, R.J Martin Palma, F. Agullo Rueda, Elsevier
4. Nanoelectronic Circuit Design, N.K Jha, D Chen, Springer
5. Handbook of Nanophysics- Nanoelectronics & Nanophotonics, K.D Sattler, CRC Press
6. Organic Electronics-Sensors & Biotechnology- R. Shinar & J. Shinar, McGraw-Hill.



Cluster Elective Paper- VIII-B-2: Practical: Synthesis and Characterization of Nanomaterials **2hrs/Week**

Minimum of 6 experiments to be done and recorded

1. Synthesis of nanocrystalline films of II-VI compounds doped with rare earths by chemical process.
2. Synthesis of Alkaline earth aluminates in nanocrystalline form by combustion synthesis.
3. Preparation of surface conducting glass plate by spray pyrolysis method
4. Preparation of surface conducting glass plate by chemical route
5. Fabrication of micro fluidic nanofilter by polymerisation reaction
6. Absorption studies on the nanocrystalline films and determination of absorption coefficient.
7. Determination of band gap from the absorption spectra using Tauc's plots.
8. Study of Hall effect in semiconductors and its application in nanotechnology.
9. Measurement of electrical conductivity of semiconductor film by Four Probe method and study of temperature variation of electrical conductivity.
10. Determination of the Band Gap of Semiconductor Nanoparticles.

Semester –VI

Cluster Elective Paper –VIII-B-3: Applications of Nanomaterials and Devices

No. of Hours per week: 04

Total Lectures: 60

UNIT-I (12 hrs)

1. Optical properties: Coulomb interaction in nanostructures. Concept of dielectric constant for nanostructures and charging of nanostructure. Quasi-particles and excitons. Excitons in direct and indirect band gap semiconductor nanocrystals. Quantitative treatment of quasi-particles and excitons, charging effects. Radiative processes: General formalization-absorption, emission and luminescence. Optical properties of heterostructures and nanostructures.

UNIT-II (12 hrs)

2. Electrical transport:

Carrier transport in nanostructures. Hall effect, determination of carrier mobility and carrier concentration; Coulomb blockade effect, thermionic emission, tunneling and hopping conductivity. Defects and impurities: Deep level and surface defects.

UNIT-III (12 hrs)

3. Applications: Applications of nanoparticles, quantum dots, nanowires and thin films for photonic devices (LED, solar cells). Single electron transfer devices (no derivation). CNT based transistors. Nanomaterial Devices: Quantum dots heterostructures lasers, optical switching and optical data storage. Magnetic quantum well; magnetic dots - magnetic data storage. Micro Electromechanical Systems (MEMS), Nano Electromechanical Systems (NEMS).



UNIT-IV(12 hrs)

4. Nanoelectronics: Introduction, Electronic structure of Nanocrystals, Tuning the Band gap of Nanoscale semiconductors, Excitons, Quantum dot, Single electron devices, Nanostructured ferromagnetism, Effect of bulk nanostructuring of magnetic properties, Dynamics of nanomagnets, Nanocarbon ferromagnets, Giant and colossal magneto-resistance, Introduction of spintronics, Spintronics devices and applications.

UNIT-V (12 hrs)

5. Nanobiotechnology and Medical application: Introduction, Biological building blocks- size of building blocks and nanostructures, Peptide nanowires and protein nanoparticles, DNA double nanowires, Nanomaterials in drug delivery and therapy, Nanomedicine, Targeted gold nanoparticles for imaging and therapy.

Reference books:

- 1.C.P. Poole, Jr. Frank J. Owens, Introduction to Nanotechnology (Wiley India Pvt. Ltd.).
- 2.S.K. Kulkarni, Nanotechnology: Principles & Practices (Capital Publishing Company).
3. K.K. Chattopadhyay and A.N. Banerjee, Introduction to Nanoscience & Technology (PHI Learning Private Limited).
4. Richard Booker, Earl Boysen, Nanotechnology (John Wiley and Sons).

Cluster Elective Paper-VIII-B-3: Practical: Applications of Nanomaterials and Devices 2hrs/Week

Minimum of 6 experiments to be done and recorded

1. Synthesis of metal nanoparticles by chemical route.
2. Synthesis of semiconductor nanoparticles.
3. Surface Plasmon study of metal nanoparticles by UV-Visible spectrophotometer.
4. XRD pattern of nanomaterials and estimation of particle size.
5. To study the effect of size on color of nanomaterials.
6. Prepare a disc of ceramic of a compound using ball milling, pressing and sintering, and study its XRD.
7. Fabricate a thin film of nanoparticles by spin coating (or chemical route) and study transmittance spectra in UV-Visible region.
8. Fabricate a pn-diode by diffusing Al over the surface of n-type Si and study its I-V characteristics.



THREE YEAR B.Sc. DEGREE EXAMINATIONS
CHOICE BASED CREDIT SYSTEM
SIXTH SEMESTER
PART - II : PHYSICS
PAPER : VII (B) : MATERIALS SCIENCE
(w.e.f. 2018)
MODEL PAPER

TIME : 3 Hours

Max. Marks : 75

Section - A

విభాగము - ఎ

(Essay Questions)


(వ్యాసరూప ప్రశ్నలు)

5 x 10 = 50 M

Answer All Questions.

(అన్ని ప్రశ్నలకు సమాధానములు వ్రాయుము)

1. (a) Discuss metallic and hydrogen bonding in crystals with examples.
స్ఫటికాలలో లోహ బంధము మరియు హైడ్రోజన్ బంధములను ఉదాహరణలతో వివరించుము.
OR
(b) Discuss about polymers and Bio-materials.
పాలిమర్స్ మరియు బయో పదార్థములను గూర్చి వివరించుము.
2. (a) What are different types of defects in solids? Explain the types of point defects with examples.
ఘన పదార్థములలో దోషముల రకములను తెల్పుము. బిందు దోషములలోని రకములను ఉదాహరణలతో వివరించుము.
OR
(b) State and explain Fick's laws of diffusion. How does diffusion coefficient depend on temperature?
వ్యాపనమునకు సంబంధించిన ఫిక్స్ నియమములను తెల్పి, వివరించుము. వ్యాపన గుణకము, ఉష్ణోగ్రతపై ఏ విధముగా ఆధారపడుతుందో తెల్పుము.
3. (a) Define creep. Explain the mechanism of creep in materials. Give some applications of creep.
ప్రాకుట అనగానేమి? పదార్థములలో ప్రాకుట అను ప్రక్రియను వివరించుము. ప్రాకుట యొక్క అనువర్తనములను తెల్పుము.
OR
(b) Explain about cold working and hot working states of materials.
పదార్థముల చల్లని పనిచేయు స్థితి మరియు వేడి పనిచేయు స్థితులను వివరించుము.
4. (a) Discuss Langevin's theory of diamagnetism. Derive an expression for the change of magnetic moment.
డయా అయస్కాంతత్వము నకు సంబంధించిన లాంజివాన్ సిద్ధాంతమును చర్చించుము. అయస్కాంత భ్రామకము లోని మార్పునకు సమీకరణమును ఉత్పాదించుము.
OR
(b) Draw and explain B - H curve for a ferromagnetic material. Identify retentivity and coercive fields on the curve.
ఫెర్రో అయస్కాంత పదార్థములకు సంబంధించిన B - H వక్రమును గీచి, వివరించుము. వక్రములో రిటెంటివిటీ మరియు కోయర్సివ్ ప్రాంతములను గుర్తించుము.

 19/12/18

5. (a) Explain the mechanism of polarization. Explain the factors affecting polarization.
ద్రువణ ప్రక్రియను వివరించుము. ద్రువణమును ప్రభావితముచేయు అంశములను వివరించుము.

OR

- (b) Explain about ferroelectric and piezo electric materials.
ఫెరో విద్యుత్ మరియు పీడన విద్యుత్ పదార్థములను గూర్చి వివరించుము.

Section - B

విభాగము - బి

(Short answer questions)

(స్వల్ప సమాధాన ప్రశ్నలు)

5 x 5 = 25M

Answer any five questions

ఏవేని ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

6. Discuss about composites.
కాంపోజిట్ లను గూర్చి చర్చించుము.
7. Distinguish between ionic and covalent bonds.
అయానిక మరియు సమయోజనీయ బంధాల మధ్య తేడాలను తెల్పుము.
8. Explain annealing with examples.
యనీలింగ్ ప్రక్రియను ఉదాహరణలతో వివరించుము.
9. Discuss briefly about line defects.
రేఖీయ దోషములను సంక్షిప్తముగ వివరించుము.
10. Mention factors affecting mechanical properties of materials.
పదార్థముల యంత్రిక ధర్మాములను ప్రభావితము చేయు అంశములను తెల్పుము.
11. Define fracture. What are brittle and ductile fractures.
పగులు అనగానేమి? పెళుసైన పగులు మరియు మెత్తని పగులు అనగానేమి?
12. State and explain weiss's theory of ferromagnetism.
ఫెర్రో అయస్కాంతత్వమునకు సంబంధించిన వీస్ సిద్ధాంతమును తెల్పి, వివరించుము.
13. Discuss about ferromagnetic domains.
ఫెర్రో అయస్కాంత డొమైన్ లను గూర్చి చర్చించుము.
14. Define dielectric constant, dielectric strength and dielectric loss.
రోధక స్థిరాంకము, రోధక సత్వము మరియు రోధక క్షీణతలను నిర్వచించుము.
15. Discuss briefly about pyroelectricity.
ఫెరో విద్యుత్ ను గూర్చి సంక్షిప్తముగ చర్చించుము.

Roha
19/2/18

THREE YEAR B.Sc. DEGREE EXAMINATIONS (CBCS), 2017-18

VI Semester, Part-II: Physics

Paper VIII B-1, Cluster Elective: Fundamentals of Nanoscience

Model paper

Time: 3 hrs

Max. Marks: 75


Section - A

Answer any FIVE questions from the following

(5X10 = 50 M)

ఏవేని ఐదు ప్రశ్నలకు సమాధానాలిమ్ము

1. Write a note on emergence of nano science with special reference to Feynman and Drexler.
నానో శాస్త్రము అభివృద్ధిని ఫిన్మెన్ మరియు డ్రెక్స్లేర్ పరంగా తెలపండి
2. Write a note on development of quantum structures. Explain the concept of quantum confinement.
క్వాంటమ్ నిర్మాణాల అభివృద్ధిపై టీకా వ్రాయండి. క్వాంటమ్ కన్ఫైన్మెంట్ భావనను వివరించండి.
3. Explain the classification of nano materials giving suitable examples for each class.
నానో పదార్థాల వర్గీకరణను తగిన ఉదాహరణలతో వివరించండి.
4. Describe the applications of carbon nanotubes.
కార్బన్ నానో గోట్టాల అనువర్తనాలను వివరించండి.
5. Describe the various ways by which polymers can be classified.
పాలిమర్ల వర్గీకరణలో వివిధ పద్ధతులను వివరించండి.
6. Explain with examples the process of step-growth polymerization.
స్టెప్ - గ్రోత్ పోలిమరీ కరణమును ఉదాహరణలతో వివరించండి.
7. Discuss the transition from crystal technology to nanotechnology.
నానో సాంకేతిక పరిజ్ఞానానికి స్పటిక సాంకేతిక పరిజ్ఞానం నుండి జరిగిన పరివర్తనను చర్చించండి.
8. Explain the reason for transparent Sum-screens using ZnO nanoparticles.
ZnO నానో కణాలను సూర్యరశ్మినుండి చర్మాన్ని కాపాడేందుకు ఉపయోగించడంలో కారణాలను తెలపండి.
9. Write note on Ti and its alloys as implant material
Ti మరియు దాని మిశ్రమలోహాలను గూర్చి టీకా రాయండి
10. What are the various soft tissue implants? Mention the list of materials used for fabrication of these implants.
మృదు కణజాల implants ను తెలిపి వానిని తయారుచేయడంలో ఉపయోగించే పదార్థాలను పేర్కొనండి ?


11/2/18

Section-B

Answer any Five questions from the following (5 x 5 = 25 M)

ఏవేని ఐదు ప్రశ్నలకు సమాధానాలివ్వు.

11. Write a note on energy bands in insulators, semiconductors and conductors.

వాహకాలు, అర్ధ వాహకాలు మరియు బంధకాల వర్గీకరణను శక్తి పట్టి ల ఆధారంగా వివరించండి.

12. Explain quantum wire.

క్వాంటమ్ తీగ ను వివరించండి.

13. What are the properties of carbon nanotubes?

కార్బన్ నానో గోట్టాల ధర్మాలను తెలపండి.

14. Write short note on Block copolymers.

Block copolymers ల గూర్చి లఘుటీకా రాయండి.

15. What are the applications of Polyethylene?

Polyethylene అనువర్తనాలను తెలపండి.

16. What are number average and weight average molecular weights of polymers?

polymer ల సగటు మరియు భార సగటు అణుభారాలు అనగా నేమి?

17. Write short note on nanoscale processes in environment.

ప్రకృతిలో నానో పరిధి పద్ధతుల పై లఘు టీకా వ్రాయండి.

18. Write short note on single electron transistor.

single electron transistor అనగా నేమి?

19. What are the ceramic implant materials?

సిరామిక్ implant పదార్థాలు అనగా నేమి?

20. Discuss various internal fracture fixation nano devices.

వివిధ అంతర పగుళ్ళను (లోపాలను) సరిచేసుకొను నానో పరికరాలను గూర్చి వివరించండి.

Rah
19/11/18

MODEL PAPER

THREE YEAR B.Sc. DEGREE EXAMINATION/CHOICE BASED CREDIT SYSTEM
SIXTH SEMESTER

PART-II : PHYSICS CLUSTER ELECTIVE

PAPER VIII BH-2: **SYNTHESIS AND CHARACTERIZATION OF NANO MATERIALS**

TIME: 3 HOURS

MAX MARKS:75

SECTION-A

Answer any FIVE Questions.

Marks: 5x10=50

1. Define Top - Down process. Explain Ball Milling Method for synthesis of nano particals.
పై నుండి క్రిందకు పద్ధతిని నిర్వచించుము. బాల్ మిల్లింగ్ పద్ధతి ద్వారా నానోకణాల సంశ్లేషణమును వివరింపుము.
2. Define Bottom-Up process. Explain Sol-Gel method for synthesis of nano materials?
క్రింది నుండి పైకు పద్ధతిని నిర్వచించుము. Sol-Gel పద్ధతి ద్వారా నానోకణాల సంశ్లేషణమును వివరింపుము.
3. Explain Composite Materials and Polymers. Write its applications.
మిశ్రమ పదార్థములు మరియు పాలిమర్లను వివరింపుము. వీటి అనువర్తనాలను వ్రాయుము.
4. What are Metallic Glasses? Mention a few metallic Glasses. How are Metallic glasses prepared?
లోహపు గాజు అనగా ఏమి? కొన్ని లోహపు గాజులను తెలుపుము. లోహపు గాజును ఏ విధంగా తయారు చేస్తారు?
5. What is meant by glass transition temperature? How glass materials are prepared?
గాజు సంక్రమణ ఉష్ణోగ్రత అనగా ఏమి? గాజు పదార్థాలను ఏ విధముగా తయారు చేస్తారు.
6. Discuss Electronic application, optical application and Magnetic application of glasses?
గాజు యొక్క ఎలక్ట్రానిక్ అనువర్తనాలు, దృశ్య అనువర్తనాలు మరియు అయస్కాంత అనువర్తనాలను చర్చించుము?
7. What are Liquid crystals? Explain different Liquid Crystal phases?
ద్రవ స్ఫటికాలు అనగా ఏమి? ద్రవ స్ఫటికాల వివిధ దశలను వివరింపుము.

8. Explain Thermal and Electrical properties of Liquid crystals?

ద్రవస్పటికాల ఉష్ణ ధర్మాలు మరియు విద్యుత్తు ధర్మాలను వివరింపుము.

9. Explain the Transmission Electron Microscope (TEM)? Give the advantages of TEM.

ట్రాన్స్మిషన్ ఎలక్ట్రాన్ మైక్రోస్కోపు (TEM) ను వివరింపుము. TEM ఉపయోగాలను తెలుపుము.

10. Explain Atomic force Microscope (AFM). Give the uses of AFM.

వరమాణబలము మైక్రోస్కోపు (AFM) ను వివరింపుము. AFM ఉపయోగాలను తెలుపుము.

SECTION-B

Answer any FIVE Questions.

Marks: 5x5=25

11. Explain Chemical vapor deposition method for Synthesis of nanomaterials.

రసాయనిక ఆవిరుల నిక్షేపము పద్ధతి ద్వారా నానోకణాల సంశ్లేషణమును వివరింపుము.

12. How are nanomaterials produced using bacteria?

బాక్టీరియాను ఉపయోగించి, నానోపదార్థాలను ఏ విధముగా ఉత్పత్తి చేస్తారు.

13. Explain the Electrical and Magnetic properties of Metallic Glasses.

లోహపు గాజు యొక్క విద్యుత్తు ధర్మాలు మరియు అయస్కాంత ధర్మాలను వివరింపుము.

14. Write a short note on diffusion.

విసరణము మీద లఘు వ్యాఖ్యను వ్రాయుము.

15. State Theories for the glass transition.

గాజు సంక్రమణ సిద్ధాంతమును తెలుపుము.

16. Write Electro Chemical application of Glasses.

గాజు యొక్క విద్యుత్తు రసాయన అనువర్తనాలను వ్రాయుము.

17. Discuss the applications of Liquid Crystals

ద్రవస్పటికాల అనువర్తనాలను చర్చించుము.

18. What are the types of Liquid Crystals displays?

ద్రవ స్పటికా డిస్ప్లేల రకాలు ఏవి?

19. Explain XRD characterization Technique for nano materias.

నానో పదార్థాల కొరకు XRD అభిలక్షణ పద్ధతి ని వివరింపుము.

20. Write Electrical properties of nano materials.

నానో పదార్థాల విద్యుత్తు ధర్మాలను వ్రాయుము.

MODEL PAPER
THREE YEAR B.Sc DEGREE EXAMINATION CHOICE BASED CREDIT
SYSTEM
SIXTH SEMESTER: PART II: PHYSICS CLUSTER ELECTIVE
Paper VIII-B-3: Applications of Nanomaterials and Devices

Time: 3 Hours

Max. Marks: 75

Section-A (Essay type)

Answer any Five questions

Marks: 5 x 10 = 50

ఏవేని ఐదు ప్రశ్నలకు సమాధానాలిమ్ము

1. Explain the Coulomb interaction in nanostructures and write the concept of dielectric constant for nanostructures.
నానో రూపాల మధ్య కూలూంబ్ అన్వేష్య చర్యలను వివరించండి మరియు నానో నిర్మాణాల రోడక స్థిరాంకముల భావనను తెలపండి.
2. Explain optical properties of heterostructures and nanostructures.
విషమ (hetero) నిర్మాణాలు మరియు నానో రూపాల దృశ్య ధర్మాలను వివరించండి.
3. Define Hall effect in nanostructures and explain how the carrier mobility and carrier concentration are determined in nanostructures.
నానో రూపాల లో హాల్ ప్రభావం ను తెలిపి వాహకాల చలనం మరియు వాహకాల కణాల సాంద్రత ను ఏవిధంగా కనుగొందురో వివరించండి.
4. Explain the tunneling and hopping conductivity in nanostructures.
నానో రూపాలలో టనలింగ్ మరియు హాపింగ్ వాహకత్వాలను వివరించండి.
5. Explain quantum dots and nano wires and their applications.
క్వాంటమ్ డొట్లు మరియు క్వాంటమ్ తీగల అనువర్తనాల తెలపండి.
6. Explain Optical switching and optical data storage nanomaterial devices.
Optical switching మరియు optical data storage నానో పదార్థ పరికరాల ను గూర్చి వివరించండి.
7. Explain the electronic structure of nanocrystals and tuning of band gap of nanoscale semiconductors.
నానో స్పటికాల ఎలక్ట్రానిక్ నిర్మాణం మరియు నానో పరిధి అర్ధ వాహకాల పట్టి అంతరాన్ని మార్చడాన్ని వివరించండి.
8. What are Spintronics, spintronics devices and write their applications.
Spintronics, spintronics పరికరాలు అనగా నేమి? వాని అనువర్తనాలను తెలపండి.
9. What are Peptide nanowires and protein nanoparticles and write their applications.
Peptide nanowires and protein nanoparticles అనగా నేమి? వాని అనువర్తనాలను తెలపండి.
10. Explain the role of nanomaterials in drug delivery and therapy.
రోగ చికిత్స లో మందుల సరఫరా చేయడంలో నానో పదార్థల పాత్రను విశదీకరించండి.


19/12/18

Section-B (Short answer type)

Answer any Five questions

Marks: 5 x5 = 25

ఏవేని ఐదు ప్రశ్నలకు సమాధానాలివ్వు.

11. What are quasi-particles and excitons? Explain.
quasi-particles మరియు excitons అనగా నేమి ? వానిని గూర్చి వివరించండి.
12. Explain the process of luminescence in nanomaterials.
నానో పదార్థాలలో ప్రతి దీప్తి ప్రక్రియను వివరిండి.
13. Explain the Coulomb blockade effect.
Coulomb blockade ప్రభావం అనగా నేమి ?
14. Write short note on thermionic emission in nanostructures.
నానో రూపాలలో జరిగే ఉష్ణ ఉత్సర్గం గూర్చి లఘు బీకా వ్రాయండి ?
15. What are CNT based transistors? Explain.
CNT ఆధార transistors అనగా నేమి ? వివరించండి.
16. What are MEMS? Write their applications.
MEMS అనగా నేమి ? వాటి అనువర్తనాలను తెలపండి.
17. Explain nanostructured ferromagnetism.
నానో రూప ఫేర్రో అయస్కాంతత్వమును వివరించండి.
18. Explain the dynamics of nanomagnets.
నానో అయస్కాంతాల గతిశీలతను వివరించండి.
19. What are DNA double nanowires? Write their applications
DNA double నానో తీగలు అనగా నేమి ? వాని అనువర్తనాలను తెలపండి.
20. Explain medical application of targeted gold nanoparticles.
targeted బంగారు నానో కణాల వైద్యశాస్త్ర అనువర్తనాలను తెలపండి.

BSM
19/2/18

ZOOLOGY SYLLABUS FOR VI SEMESTER

W.E.F. 2017-18

ZOOLOGY –ELECTIVE PAPER:VII-(A)

IMMUNOLOGY

Periods:60

Max. Marks:100

Unit - I

1.1 Overview of Immune system

- 1.1.1 Introduction to basic concepts in Immunology
- 1.1.2 Innate and adaptive immunity

1.2 Cells and organs of Immune system

- 1.2.1 Cells of immune system
- 1.2.2 Organs of immune system

Unit - II

2.1 Antigens

- 2.1.1 Basic properties of antigens
- 2.1.2 B and T cell epitopes, haptens and adjuvants
- 2.1.3 Factors influencing immunogenicity

Unit - III

3.1 Antibodies

- 3.1.1 Structure of antibody
- 3.1.2 Classes and functions of antibodies
- 3.1.3 Monoclonal antibodies

Unit - IV

4.1 Working of Immune system

- 4.1.1 Structure and functions of major histocompatibility complexes
- 4.1.2 Exogenous and Endogenous pathways of antigen presentation and processing

Unit - V

5.1 Immune system in health and disease

- 5.1.1 Classification and brief description of various types of hyper sensitivities

5.2 Vaccines

- 5.2.1 General introduction to vaccines
- 5.2.2 Types of vaccines

ZOOLOGY PRACTICAL SYLLABUS FOR VI SEMESTER

ZOOLOGY - ELECTIVE PAPER – VII-(A)

IMMUNOLOGY

Periods: 24

Max. Marks: 50

1. Demonstration of lymphoid organs (as per UGC guidelines)
2. Histological study of spleen, thymus and lymph nodes (through prepared slides)
3. Blood group determination
4. Demonstration of
 - a. ELISA
 - b. Immunoelectrophoresis

**ZOOLOGY SYLLABUS FOR CLUSTER ELECTIVE –VIII-B:
VI SEMESTER**

AQUACULTURE

Cluster Elective Paper: VIII-B-1

PRINCIPLES OF AQUACULTURE

Periods:60

Max.Marks:75

Unit – I

1.1 Introduction / Basics of Aquaculture

- 1.1.1 Definition, Significance and History of Aquaculture
- 1.1.2 Present status of Aquaculture – Global and National scenario
- 1.1.3 Major cultivable species for aquaculture: freshwater, brackish water and marine.

Unit – II

2.1 Types of Aquaculture

- 2.1.1 Freshwater, Brackishwater and Marine
- 2.1.2 Concept of Monoculture, Polyculture, Composite culture.

2.2 Culture systems

- 2.2.1 Ponds, Raceways, Cages, Pens, Rafts and water recirculating systems

2.3 Culture practices

- 2.3.1 Traditional, extensive, modified extensive, semi-intensive and intensive cultures of fish and shrimp.

Unit – III

3.1 Design and construction of aquafarms

- 3.1.1 Criteria for the selection of site for freshwater and brackish water pond farms
- 3.1.2 Design and construction of fish and shrimp farms

3.2 Seed resources

- 3.2.1 Natural seed resources and Procurement of seed for stocking: Carp and shrimp

3.3 Nutrition and feeds

3.3.1 Nutritional requirements of a cultivable fish and shellfish

Unit – IV

4.1 Management of carp culture ponds

4.1.1 Culture of Indian major carps: Pre-stocking management – Dewatering, drying, ploughing/desilting; Predators, weeds and algal blooms and their control, Liming and fertilization; Stocking management – Stocking density and stocking; Post-stocking management – Feeding, water quality, growth and health care; and Harvesting of ponds

4.2 Culture of giant freshwater prawn, *Macrobrachium rosenbergii*

Unit – V

5.1 Culture of shrimp (*Penaeus monodon* or *Litopenaeus vannamei*)

5.2 Culture of seaweeds-species cultured, culture techniques, important by-products, prospects

5.3 Culture of ornamental fishes – Setting up and maintenance of aquarium; and breeding.

REFERENCES BOOKS

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CLUSTER ELECTIVE PAPER: VIII-B-2

AQUACULTURE MANAGEMENT

Periods : 60

Max.Marks : 75

Unit – I

1.1 Breeding and Hatchery Management

- 1.1.1 Bundh Breeding and Induced breeding of carp by Hypophysation; and use of synthetic hormones
- 1.1.2 Types of fish hatcheries; Hatchery management of Indian major carps
- 1.1.3 Breeding and Hatchery management of *Penaeus monodon*/ *Litopenaeus vannamei*
- 1.1.4 Breeding and Hatchery management of giant freshwater prawn.

Unit – II

2.1 Water quality Management

- 2.1.1 Water quality and soil characteristics suitable for fish and shrimp culture
- 2.1.2 Identification of oxygen depletion problems and control mechanisms in culture ponds
- 2.1.3 Aeration: Principles of aeration and Emergency aeration

Unit – III

3.1 Feed Management

- 3.1.1 Live Foods and their role in shrimp larval nutrition.
- 3.1.2 Supplementary feeds: Principal foods in artificial diets; Types of feeds; Feed additives and Preservatives; role of probiotics.
- 3.1.3 Feed formulation and manufacturing; Feed storage

Unit – IV

4.1 Disease Management

- 4.1.1 Principles of disease diagnosis and health management;
- 4.1.2 Prophylaxis, Hygiene and Therapy of fish diseases
- 4.1.3 Etiology, Symptoms, prophylaxis and therapy of common fish diseases in fish ponds

Unit – V

5.1 Economics and Marketing

- 5.1.1 Principles of aquaculture economics – Capital costs, variable costs, cost-benefit analysis
- 5.1.2 Fish marketing methods in India; Basic concepts in demand and price analysis

5.2 Fisheries Extension

- 5.1.3 Fisheries Training and Education in India; Role of extension in community development.

REFERENCE BOOKS

1. Boyd CE. 1979. *Water Quality in Warm Water Fish Ponds*. Auburn University
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CLUSTER ELECTIVE PAPER: VIII-B-3

POSTHARVEST TECHNOLOGY

Periods : 60

Max.Marks : 75

Unit – I

1.1 Handling and Principles of fish Preservation

- 1.1.1 Handling of fresh fish, storage and transport of fresh fish, post mortem changes (rigor mortis and spoilage), spoilage in marine fish and freshwater fish.
- 1.1.2 Principles of preservation– cleaning, lowering of temperature, rising of temperature, denudation, use of salt, use of fish preservatives, exposure to low radiation of gamma rays.

Unit – II

2.1 Methods of fish Preservation

- 2.1.1 Traditional methods - sun drying, salt curing, pickling and smoking.
- 2.1.2 Advanced methods – chilling or icing, refrigerated sea water, freezing, canning, Irradiation and Accelerated Freeze drying (AFD).

Unit – III

3.1 Processing and preservation of fish and fish by-products

- 3.1.1 Fish products – fish minced meat, fish meal, fish oil, fish liquid (ensilage), fish protein concentrate, fish chowder, fish cake, fish sauce, fish salads, fish powder, pet food from trash fish, fish manure.
- 3.1.2 Fish by-products – fish glue, ising glass, chitosan, pearl essence, shark fins, fish leather and fish maws.

3.2 Seaweed Products

- 3.2.1 Preparation of agar, algin and carrageen. Use of seaweeds as food for human consumption, in disease treatment and preparation of therapeutic drugs.

Unit – IV

4.1 Sanitation and Quality control

- 4.2.1 Sanitation in processing plants - Environmental hygiene and Personal hygiene in processing plants.

Unit – V

5.1 Quality Assurance, Management and Certification

- 5.1.1 Seafood Quality Assurance and Systems: Good Manufacturing Practices (GMPs); Good Laboratory Practices (GLPs); Standard Operating Procedures (SOPs); Concept of Hazard Analysis and Critical Control Points (HACCP) in seafood safety.

REFERENCE BOOKS

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ZOOLOGY PRACTICAL SYLLABUS CLUSTER ELECTIVE PAPER: VIII-B
VI SEMESTER

PRINCIPLES OF AQUACULTURE

PRACTICAL: I

Periods : 24

Max.Marks : 50

Cultivable fishes

1. Identification and study of important cultivable and edible fishes - Any ten
2. Identification and study of important cultivable and edible crustaceans - Any five

Diseases

1. Identification and study of fish and shrimp diseases - Using specimens / pictures
2. External examination of the diseased fish – diagnostic features and procedure.
3. Autopsy of fish – Examination of the internal organs.

Pond Management

1. Water Quality -Determination of temperature, pH, salinity in the pond water sample; Estimation of dissolved oxygen, free carbondioxide, total alkalinity, total hardness, phosphates and nitrites.
2. Identification and study of common zooplankton, aquatic insects and aquatic weeds – Each 5

**ZOOLOGY PRACTICAL SYLLABUS CLUSTER ELECTIVE PAPER: VIII-B
VI SEMESTER**

AQUACULTURE MANAGEMENT

PRACTICAL - II

Periods :24

Max.Marks : 50

Nutrition

1. Identification and study of Live food organisms – Any five
2. Formulation and preparation of a balanced fish feed

Post harvest Technology

1. Evaluation of fish/ fishery products for organoleptic, chemical and microbial quality.
2. Developing flow charts and exercises in identification of hazards – preparation of hazard analysis worksheet, plan form and corrective action procedures in processing of fish.

ZOOLOGY PRACTICAL SYLLABUS CLUSTER ELECTIVE PAPER: VIII-B

VI SEMESTER

PRACTICAL – III

PROJECT WORK

Visit to a fish breeding centre / fish farms and submit a project report

or

Visit to a feed manufacturing unit and submit a project report

or

Visit to a shrimp hatchery / shrimp farms and submit a project report

or

Visit to a shrimp processing unit and submit a project report

IMMUNOLOGY.

Time : 3hrs.

Max. Marks: 75

I. Answer any five of the following:

5x5 = 25

1. Innate Immunity - సహజ అసంక్రమ్యత
2. Haptenes - ~~భాగ~~ సజీవీకరణ
3. Features of IgG - IgG స్వభావము.
4. Cytokines - సైటోకైన్లు.
5. Anaphylaxis - అనాఫిలాక్సిస్
6. phagocytosis. - భక్షణక్రియ
7. Vaccines - వ్యాక్సిన్లు.

II. Answer any five of the following.

5x10 = 50.

Draw labelled diagrams wherever necessary.

9. (a) What is Immunity? Explain different types of Immunity.
అసంక్రమ్యత అనగా నేమి? అసంక్రమ్యతలలోని వివిధ రకములను వివరింపుము.

(or)

- (b) Write an essay on T and B lymphocytes and explain how they are useful in Immune response.

T మరియు B లింఫోసైట్లను గురించి వివరించి అసంక్రమ్య అనుక్రియలలో వాటి ఉపయోగములపై చికిత్సాసహాయము వ్రాయుము.

- (10) (a) Describe organs of Immune system with functions.

అసంక్రమ్యత వ్యవస్థ కల అ.లింఫాాయిడ్ అవయవాలను వర్ణించి మరియు విధులను వివరింపుము.

(A)

⑤ Describe The factors influencing Immunogenicity.
కణ మధ్యకేంద్రములు ప్రభావితంచేయు కారకములను
వివరింపుము.

⑥ (a) Describe structure and classification of Antibodies.
ఐంటిబాడీల నిర్మాణము మరియు వర్గీకరణను వివరింపుము.
(౧)

⑥ (b) Describe The properties and functions of Monoclonal Antibodies.
మోనోక్లోనల్ ఐంటిబాడీల లక్షణములను మరియు విధులను
వివరింపుము.

⑦ (a) Write an essay on HLA-typing and its importance.
'HLA టైపింగ్', అనగా నేమి? దాని ప్రాముఖ్యతను గురించి
వ్రాయుము.
(౧)

⑦ (b) Describe Exogenous and Endogenous pathways of Antigen presentation and processing.
ఐంటిజనాల బహిర్గత మరియు అంతర్గత ప్రక్రియలను
మరియు బయటపెట్టే విధానాన్ని వివరింపుము.

⑧ Define Hypersensitivity. Write an essay on different types of Hypersensitivities.
హైపర్ సెన్సిటివిటీ అనగా నేమి. హైపర్ సెన్సిటివిటీల చరిత్రను గురించి
ఒక వ్యాసమును వ్రాయుము. (౧)

⑨ Enumerate The Concepts of Autoimmunity and Immunodeficiency.
స్వీయము అసంక్రమిత మరియు అసంక్రమిత రూపం గురించి వ్రాయుము.
[Post-Chair person] Pranav 8/1/18

Time: 3hr.

Maximum: 75

5×5=25

I. Answer any five of the following;
Draw labelled diagrams wherever necessary.

1. Significance of Aquaculture.
ఆకాశికల్పం (పావశిక్షితం తెలుగువం.
2. Pen System - పెన్ సిస్టం ఏదే.
ఫ
3. Site selection for fish pond farm.
చోటు ఎక్కడ నాకాశం ఏదే.
4. Importance of Natural and Artificial food in fish Culture.
చోటు పెన్ సిస్టం సహా మరెండు కృత్రం ఆహారం ఏదే.
పావశిక్షితం.
5. Indian major Corps; భారతదేశపు ప్రధాన కార్పస్ ఏదే.
6. Ornamental fishes - అలంకారికం ఉపయోగించు చోటు.
7. Weed Control - కలుపు మొక్కల నియంత్రణ.
8. Intensive Culture - ఐంటెన్సివ్ కల్చర్.

5×10=50

II. Answer ALL of the following.
Draw labelled diagrams wherever necessary.

9. a) write an essay on present status of Aquaculture.
ఆకాశికల్పం మొక్క ఉన్నత స్థాయి/స్థితి పై ఒక వ్యాసం వ్రాయండి.
[OR]
- b) write an account on major Cultivable species for fresh water Culture.
మంచినీటి వర్తనం గల మొక్కల వివరణ వ్రాయండి.
సూచించండి (పావశిక్షితం)

10. a) write an essay on Composite fish Culture.
కంపోజిట్ చేపల పెంపకం పై ఒక వ్యాసం వ్రాయండి.
[OR]

b) Explain in detail the traditional and extensive culture practices of Shrimp.
ప్రదేశీ కల్చర్ లు, అవలంబించే సాంప్రదాయ మరియు విస్తృత పద్ధతులను గురించి విపులంగా వివరింపుము.

11. a) write an essay on Seed resources of Carps.
కార్ప్ చేప ఉత్పత్తి వనరులపై ఒక వ్యాసం వ్రాయండి.
[OR]

b) Explain in detail the nutritional requirements of Cultivable Shell fish.
కల్చర్ చేపల పెంపకానికి అవసరం అయిన పోషక విధానం ను వివరింపుము.

12. a) write an essay on Stocking Management of ponds.
పెంపక చేరువుల నిల్పి వివ్రిహితం పై ఒక వ్యాసం వ్రాయండి.
[OR]

b) Explain culture of Macrobrachium rosenbergii.
మాక్రోబ్రాకియం రోసెన్ బెర్గ్ పెంపకం ను వివరింపుము.

13. a) write an essay on pearl oyster Culture.
ముత్యేళ్ళు ఆర్కల్చర్ పెంపకం ను వివరింపుము.
(or)

b) write a note on Seaweed Culture techniques.
సముద్రపు (కలుపు) పొచ్చి వర్తన పద్ధతులను వివరింపుము.

Time: 3 hrs.

Max. marks: 75

I. Answer any Five of the following.

5 × 5 = 25

Draw labelled diagrams wherever necessary.

1. Bundh breeding.
2. Synthetic Hormones.
3. Aeration.
4. Artificial Diet.
5. Feed Additives.
6. Fish immunization.
7. Cost benefit Analysis.
8. Cryopreservation.

II. Answer any Five of the following.

5 × 10 = 50

Draw labelled diagrams wherever necessary.

① Explain the steps involved in the Induced breeding.

ఉత్పాదక ప్రక్రియలో ఉన్న వివిధ దశలను వివరించండి.

or.

② Describe the types of fish hatcheries.

వివిధ రకాల చేపల పోషకాలను వివరించండి.

③ Discuss the physical factors suitable for

culturing of Aquatic animals.

జలచర జీవుల పోషకాలను వివరించండి.

④ Write about the fertilizers commonly used in fish ponds.

చేపల పోషకాలను వివరించండి.

11) a) Describe The Supplementary feeds used in Shrimp Culture
తాములను కల్పిత చీమలుతో కలిపిన అదనపు ఆహారం
గురించి వివరింపుము. [OR]

b) write about The fertilizers

c) write an essay on feeding mechanisms.

ఆహారవిధానం గురించి ఓక వ్యాసమును వ్రాయుము

12) a) Explain The diseases occur in Culturing fishes.

చేపలకల్పిత అంటు వ్యాధులను గురించి వివరింపుము.

[OR]

b) Explain The diseases occur in Culturing fishes.

c) Describe The common diseases in Shrimp during Culture

తాముల పెంపకము అంటు వ్యాధులను వివరింపుము.

13) a) Explain fish marketing methods in India.

[OR]

జి: భారత దేశంలో చేపల మార్కెటింగ్ విధానాలను వర్ణింపుము.

[OR]

b) Describe The role of fisheries training and Education in India.

భారత దేశము అందు చేపలను గురించి అభ్యయనము
మరియు శిక్షణను వివరింపుము.

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Signature
Bas- Chairperson

ZOOLOGY - VI SEMESTER
CLUSTER Elective paper: VIII B-3.
POST HARVEST TECHNOLOGY

Time: 3hrs.

Max: marks: 75

5×5=25

I. Answer any five of the following.

1. Transport of fish - చేపల రవాణా
2. Denudation - డీ న్యుడేషన్
3. Accelerated freeze drying - ఎక్స్ థర్మో ఫ్రైజ్ డ్రైయింగ్
4. Ensilage - ఎన్ సేజ్ విధానము.
5. Sea weeds - సముద్రపు కలుపు మొక్కలు
6. Preprocessing measures - ప్రాథమిక ప్రక్రియ కొలవడానము.
7. Therapeutic Drugs - వేక్సిన్స్ విధానములని వివరించండి.
8. Fish by products - Importance - చేపల ఇతర ఉత్పత్తులు - ప్రాముఖ్యత

II. Answer any five of the following.

9a) Discuss how the fish was handled during preservation.
 చేపల నిల్వ చేయడంలో ఎటువంటి మెరుగు పరికరాలను వాడాలి మరియు వాటిని ఎలా ఉపయోగించాలి.
 [OR]

9b) Describe the principles involved in fish preservation.
 చేపల నిల్వ చేయడంలో వాడాలి వలసిన సూత్రములను వివరించండి.

10a) Write about various traditional methods of fish preservation.
 చేపలను నిల్వ చేయడంలో సాంప్రదాయ పద్ధతులను వివరించండి.
 [OR]

10b) Explain the advanced methods of fish preservation.
 చేపలను నిల్వ చేయడంలో అధునాత పద్ధతులను వివరించండి.

(11) a) write an essay on fish byproducts.

పేదల నుండి లభ్యమయ్యే ఇతర ఉత్పన్నకాలను గురించి వ్యాసము
(వ్రాయుము). [OR]

b) Describe The products produced from Sea weeds.

సముద్రపు కలుపు మొక్కల నుండి ఉత్పత్తి అగు ఉత్పన్నకాలను
వివరింపుము.

(12) a) write about Sanitary measures in processing plants

మొక్కల యందు పరిశుభ్రత అనగా మెరుకువలను వివరింపుము.

[OR]

b) Explain The regulatory affair in Industries.

పరిశ్రమల యందు క్రమబద్ధ కరణ విధానాన్ని వర్ణింపుము.

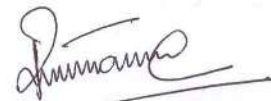
(13) a) Describe Various Quality Assurance and Systems
in Sea food Safety.

సముద్రపు ఆహారం అనగా వివిధ రకాలైన నాణ్యత పద్ధతులను
వారి రక్షణను గురించి వివరింపుము.

[OR]

b) what are National & International Standards
in Quality Assurance.

నాణ్యత ప్రమాణాలను నిర్ధారించు ఖాతీయ మరియు
అంతర్జాతీయ విధానములను తెల్పుము.



8.1.18

[Chairperson]

SRI VENKATESWARA UNIVERSITY

DEPARTMENT OF CT& HM (Catering Tourism & Hotel Management) Choice Based Credit System (C.B.C.S) Syllabus and Scheme Of Examination

Course: BSc

(WITH EFFECT FROM THE ACADEMIC YEAR 2015 -2016)

Subject: CT&HM

FIRST YEAR									
Semester	Part	Paper Code	Title of the Paper	No. of Hours		Credits	IA	EE	Total Marks (100)
				T	P				
Semester I	Part 1		Language 1	4	0	4	25	75	100
			Language 2	4	0	4	25	75	100
	SK/FC		Fundamentals of Communication Skills	1	2	2	25	25	50
			Indian Heritage and Culture	1	2	2	25	25	50
	Part 2	CTHM 101	Principles of Tourism - I	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 102	Food production -I	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 103	Food Beverage Service - I	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
			Total Marks	22	13	30			750
Semester II	Part 1		Language 1	4	0	4	25	75	100
			Language 2	4	0	4	25	75	100
	SK/FC		Building Vocabulary	1	2	2	25	25	50
			Professional Life Skills - I	1	2	2	25	25	50
	Part 2	CTHM 201	Bakery	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 202	Front office - I	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 203	Accommodation Operation - I	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
			Total Marks	22	13	30			750

SECOND YEAR									
Semester	Part	Paper Code	Title of the Paper	No. of Hours		Credits	IA	ES	Total Marks (100)
				T	P				
Semester III	Part 1		Language 1	4	0	4	25	75	100
			Language 2	4	0	4	25	75	100
	SK/FC		Communication Practice - I	1	2	2	25	25	50
			Human Values and Ethics	1	2	2	25	25	50
	Part 2	CTHM 301	Pilgrimage Tourism and Hospitality Management - II	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 302	Food production -II	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 303	Food Beverage Service - II	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
			Total Marks	22	13	30			750
Semester IV	Part 1		Language 1	4	0	4	25	75	100
			Language 2	4	0	4	25	75	100
	SK/FC		Communication Practice - II	1	2	2	25	25	50
			Professional Life Skills - II	1	2	2	25	25	50
	Part 2	CTHM 401	Tourism Marketing -III	4	-	4	25	75	100
			Seminar	-	3	2	-	50	50
		CTHM 402	Front office - II	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 403	Accommodation Operation - II	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
			Total Marks	22	13	30			750

THIRD YEAR									
Semester	Part	Paper Code	Title of the Paper INTERNSHIP/PROJECT WORK	No. of Hours		Credits	IA	ES	Total Marks (100)
				T	P				
Semester V	Part 2		Evaluation by Hotels & Exams						
		CTHM 501	Food Production			8	100	100	200
		CTHM 502	Food & beverage Services			8	100	100	200
		CTHM 503	Front office			8	100	100	200
		CTHM 504	Accommodation Operation			8	100	100	200
		CTHM505	Seminars + Log Book			4	100	-	100
			Environmental Studies	1	2	2	25	25	50
			Total Marks	25	14	38			950
Semester VI	Part 2	CTHM 601	Food production -III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 602	Food Beverage Service - III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 603	Front office Management - III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 604	Accommodation Operation - III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 605	Hotel Law	4	-	4	25	75	100
			Seminar	-	3	2	-	50	50
		CTHM 606	Travel & Tour Management- IV	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
	SK		Communication Practice – III (Writing Skills)	1	2	2	25	25	50
			Total Marks	25	19	38			950
			Grand Total	138	85	196			4,900

**FIRST YEAR
I SEMESTER
CT & HM--101 PRINCIPLES OF TOURISM - I**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Tourism – Definition – Nature and Scope – History of Tourism and its development – Motivation – for Travel – Types of tourism Domestic and International Tourism.

Unit – II

Social and Economic significance of Tourism – Environmental and Social Impact of Tourism - Tourism as an Industry – Ancillary industries in Tourism

Unit – III

Tourism – Analyse the Scenario and Five year plans – Impact of Tourism – Contribution of Andhra Pradesh State Tourism – Along with different organization. Eg. WTO, IATA, PATA, ICAO, TAAI and UFTAA.

Unit - IV

Natural resources – wildlife – Beaches – Hill Resorts – Impact of Tourism on Physical Environment – Air – Water – Soil – Mountain – Ecology etc. – Social Impact of Tourism – Unity of In diversity in Indian context.

Unit – V

Importance of Tourism in India – fairs and festivals – Kumbhamela – Mysore Dasara – Brahmotsavams of Tirumala – Tribal culture – History and Culture for Tourism – Ajantha – Ellora – amaravathi – Nagarjunakonda – Mahabalipuram – BellarandHaldidu – Tirupati – Puri – Delhi – Goa – Mount Abu.

PRACTICALS:

1. Visit to A.P. Tourism Department
2. Wild life / Beaches / Record work / AP Regional wise
3. Hill resorts
4. Transport: a) Air, b) Sea, c) Railway, d) Bus
5. Visit to any culture regions – Case Study

REFERENCES:

1. An Introduction to Travel and Tourism – Jag Mohan Nagi
2. Air Lines and ticketing for tourism – Jag Mohan Nagi
3. IATA ticketing manual – Ticketing course material

B.Sc. (CT & HM)
I-Semester
CT & HM -101 PRINCIPLES OF TOURISM - I
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write short note on any one wild life sanctuary?
2. Explain any two important hill station in India?
3. Write short note on Nagarjuna Konda?
4. What are the functions of TDC?
5. Write any one famous world heritage places in India.
6. Write about history of travel agency?
7. Define International Tourism?
8. Explain Simhachalam as a historical tourist place.

Section-B

Answer All Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write about types and forms of tourism.
(or)
b) Explain the social and economical significance of Tourism?
10. a) What are the services provided by Tourism Industry?
(or)
b) Write about the importance of Kumbamela?
11. a) Explain any two eco-tourism places in A.P.
(or)
b) Explain International Tourism.
12. a) Discuss the importance of monuments and museums.
(or)
b) Explain impact of tourism in Indian economy.
13. a) Write any two beaches in India?
(or)
b) Explain the Scenario of Tourism in India?

**FIRST YEAR
I SEMESTER
CT & HM-102 FOOD PRODUCTION-I**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Introduction to cooking – origin of cooking – Culinary terms.

Basic Commodities – Types of commodities, Explanation of various types and their usage in cooking / Processing of cream, types of Butter and its uses classification of cheese and its uses.

Unit – II

Kitchen organization – listing of the classical kitchen Brigade and Kitchen Brigade in various category hotels. Flight kitchen, hospital and institution kitchen, attributes of kitchen staff and Job Description of Staff, Co-ordinating Departments, Layout of kitchen in various organizations, Raw material receiving Areas, storage Areas, Layout of service wash up area of kitchen.

Unit – III

Equipments and Fuels used – Different equipment used in food in food production. Mode of operation, care and maintenance, Different types of fuel used.

Aims and objectives of food production.

Unit – IV

Quantitative and qualitative aspects, different types of basic stocks and sauces and their preservatives usage in food preparation.

Principles of food production – Classification Selection, Principles of cookery, effect of cooking usage in food preparation, cooking, Accompanied garnishes and presentation of:

(a) Cereals and pulses (d) Egg Cookery

(b) Vegetable & Fruits (d) Meat & Meat Products

(c) Milk Products

Unit – V

Methods of cooking – types of cooking methods with proper examples.

Menu & Menu planning – origin and description of menu. Types of menu and difference between menus, planning and competition of Menu, factors and considerations of menu planning - Different courses of French Classical menu with Examples, Different kinds of Breakfast -Explanation of Brunch & lunch, Dinner and supper aftertation tea of high Tea etc.

PRACTICALS:

1. Identification of equipments, grocery and provision.
2. Preparation of basic stocks and Soups
3. Preparation of continental menus
4. Preparations of Cereals, Pulses, Milk, Meat product, Egg cookery, Fruit and Vegetables.
5. Garnishing presentation of carving.

REFERENCES:

1. Modern cookery – volumes – Thangam E. Phillip – 5th Edition, 2003, Orient Longman.
2. Theory of catering – Kinton and CeseramiELBS with hodder and Stoughton.
3. Food preparation theory – Eva Medwed Prentice
4. Practical professional cookery – Crockewell and KanuttmannMacmillam
5. Complete Cookery Manual – Antony O' Reilley (ELBS)

B.Sc. (CT & HM)
I-Semester
CT & HM--102 FOOD PRODUCTION - I
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. What is cooking? Write about the origin of cooking?
2. What is the hygiene? Write in detail about personal hygiene?
3. Draw a kitchen brigade chart?
4. Write in detail about different method of cooking
5. Write in detail about different types of stocks?
6. Draw any Five vegetable cuttings
7. Functions of catering industry?
8. Write about manual Equipments ?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write about various types of commodities and their usage in cooking.
(or)
b) Classify basic sauces and Explain and give atleast three derivatives for each sauces.
10. a) Explain bread making process in detail.
(or)
b) Explain kitchen equipments mechanical manual and machinery equipments
11. a) Explain menu-planning and points to consider while planning?
(or)
b) Explain French classical menu?
12. a) Explain in detailed the principles of food preparation in Five star hotels?
(or)
b) Write about different types fuel used in kitchen?
13. a) Draw the layout of Kitchen organization and explain?
(or)
b) Describe the difference between quantitative and quality in kitchen in detail?

**FIRST YEAR
I SEMESTER
CT & HM--103 FOOD BEVERAGE SERVICES - I**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Introduction to Catering Technology – Definition – Need and Scope – Types – Career – Opportunities – Functions of Catering Industry.

Unit – II

Food and Beverage Service organization – Food and Beverage Service Organization – Hierarchy, Job specification and Job description of Staff, Attributes of Food and Beverage Service Personnel – Co-ordinating with Other Departments.

Unit – III

Types Of Food And Beverage Service Outlets – About Various Types of Service Outlets, Brief Description about the Service Outlets. Difference Between Specialized Restaurant and Multi Casting Restaurant, Room Services, Banquets, Operations, Pantry, Food Pick-Up Areas, Stores and Linen Room, Kitchen Stewarding.

Unit – IV

Food and Beverage Service Area Equipments – Introduction of Various Areas. Describing the Area, Still Rooms Silver Room, Washup, Hot Plate, Dispense Bar & Spare – Linen Store – Lightening, colour etc. Different types of Linen and Furniture. Equipment and their Classification. Different Types of cutlery, Glassware, Crockery etc.

Unit – V

Food and Beverage Service – Types of Food Service, Description of Food Science, Cafeteria Service and Counter Service, Room Service and Banquet Hall Buffet Define Mise-en-Scene, Mise-en-Place, Restaurant Reservations, Wine – making.

PRACTICALS:

1. Familiarization of restaurant equipment.
2. Maintenance of the equipment and Silver
3. Menu planning
4. Description of Dishes and their accompartments.
5. Misen-en-seen and Mise-en-place.

REFERENCES:

1. Test Book of Food and Beverages Service – S.N. Bagchi&Anitha Sharma, Aman Publications, New Delhi, 1st Edition.
2. Food & Beverage Service – B.R. Lillicrap&Courius – 2003 ELBS.
3. Modern Restaurant Service – John Fuller – Stanley Thornupub Ltd.
4. Introduction to Modern Food & Beverage Service by William H Krant.

B.Sc. (CT & HM)
I-Semester
CT & HM-103 FOOD & BEVERAGE SERVICE - I
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write the classification of food and Beverage service equipment.
2. Write about the rate of computer application in food and Beverage Service.
3. Explain the care and maintain of silver dining equipment.
4. Write the principles of Menu planning
5. Define Mise-en-Scene and Mise-en-place
6. Differentiate between cocktail and mock tail.
7. Mention 5 Principles of restaurant reservation.
8. Write about Banquets Service?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 25 M

9. a) Define catering technology write the classification and function of catering organization
(or)
b) Write about various types of Food and Beverage Service Outlets.
10. a) Explain Food and Beverage Service sequence with illustrations.
(or)
b) Describe about the service area and explain about the linen furniture equipment used in it.
11. a) Define Beverage write classification. Explain the procedure of wine preparation.
(or)
b) What in Food Cost. Describe the different control methods allowed by Beverage organization to control the food cost.
12. a) Name the basic services, classify and give atleast three derivatives for each.
(or)
b) Write about classical kitchen brigade and kitchen brigade in 3 star hotel.
13. a) Write about various types of commodities and their usage in cooking.
(or)
b) Explain the Bread making process.

**FIRST YEAR
II SEMESTER
CT & HM-201 BAKERY-I**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Baking, History of baking, Importance of baking under the Principles of baking and fermented goods – Equipments.

Unit – II

Ingredients :Flour, baking powder, Yeast, eggs, Fat, Essence. Icing-Types of icing, importance of Ingredients to get a final product, Time and temperature-Role of time and temperature in baking.

Unit – III

Bread making / process Faulty breads and perfect bread, stale bread moulds, roasting, Combined method of cooking – Changes taking place during fermentation – Bread improvers.

Unit – IV

Baking in ancient times, Commercial baking, Benefit of baking, Influence of Baking, various types of bread, commercial and cultural significance.

Unit – V

Know the methods of making Biscuits, Cakes, Puff, Pastry decoration – various methods – cake ingredients and role – cake faults – Making puff pastry – cake decorations.

PRACTICALS:

1. Preparing Breads(3)
2. Preparing Biscuits(3)
3. Preparing Cakes(3)
4. Preparing Icing(3)

REFERENCES:

1. Baking 100 Everyday Recipes (100 Recipes) Hardcover – 1 Jan 2015by Parragon Books
2. Cupcakes and Muffins 100 Everyday Recipes (100 Recipes) Hardcover – 1 Jan 2015by Parragon
3. The Big Book of Treats Paperback – 24 Mar 2014by PoojaDhingra (Author)
4. Complete Book of Baking: Over 400 Recipes for Pies, Tarts, Buns, Muffins, Cookies and Cakes, Shown in 1800 Step-by-step Photographs Paperback – Import, 1 Sep 2012by Martha Day

B.Sc. (CT & HM)
II-Semester
CT& HM -201 BAKERY
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Define baking in detail?
2. What is a bread?
3. What is icing?
4. Write about dry method of cooking?
5. Write the importance of yeast in baking?
6. Write the importance of baking powder in baking?
7. What is a stale bread?
8. Write the history of Baking?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write the role of Time and Temperature in Baking?
(or)
b) Differentiate between a good and a faulty bread?
10. a) Write about different types of icing?
(or)
b) Write the role of all important ingredients in details?
11. a) Trace the history of baking and its importance in industry?
(or)
b) Write about different methods of cooking and Compare baking with different method of cooking ?
12. a) Write about different types of flour used in baking and their benefit?
(or)
b) Write in detail about cultural and commercial Significance of baking ?
13. a) Explain the methods of making cakes in detail?
(or)
b) What is meant by Bread improves and explain?

**FIRST YEAR
II SEMESTER
CT&HM-202 FRONT OFFICE**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Introduction to Hospitality Industry – The history of Travel – Hotels and their classification – Classification of Guest – Understanding Guest Service.

Unit – II

Hotel Management and Organization – Principles of Management – Basic Management function – Hotel Organization – Hotel Automated system – Introduction to Integrated property management system.

Unit – III

Front office systems – Key terms – Management System – Other Applications – The Guest Cycle – Stages of Guest Stay – External Agencies.

Unit – IV

Front Office Management – Front Office Organization and Job descriptions – Basic Functions of the Front office – Front Office – Uniformed Services – Organization large and small Hotel Front Office – Job Description of Front Office Personnel

Unit – V

Competencies of Front Office professional – Competencies – Establishing Room Rates – Room Rate methodologies – for costing Room Availability – Introduction Influences or forecasts – Fore cost formula

PRACTICALS:

1. Whitney reservation system
2. Checking in guest with confirmed booking
3. Lobby attendant
4. Errand Card
5. Welcome slip
6. Handling walk in guest and change of room

REFERENCES:

1. Front Office Management – S.K. Bhatnagar, 1st Edition, 2004 Frank Bros, Chennai.
2. Careers and Training in Hotels – Hjayter, Roy
3. Hotel Reception, Reception and Cashier – White, Paul B and Hellen (Heinemann)
4. Basic Hotel Front Office Procedures – Werner, Palter.

B.Sc. (CT & HM)
II-Semester
CT&HM -202 FRONT OFFICE-I
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write about the history of travel.
2. Classification of hotels.
3. What is mean by principles of management?
4. Draw the Hotel organization chart?
5. Write the Functions of Basic Management?
6. What are the benefits of positive attitude?
7. What is the difference between needs and wants?
8. Give the difference between status and self-esteem?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Give the differences with examples between physical security and emotional security?
(or)
b) What is the differences between marketing and sales?
10. a) Explain the various pricing strategies?
(or)
b) Explain detail the operating budget?
11. a) What are the local agencies that influence food operations how do they do so?
(or)
b) How does legal environment impact the business.
12. a) Key control is a vital activity in front Offices expalin?
(or)
b) What are the influence of fore costing?
13. a) Why is forecasting to the front office professionals
(or)
b) Draw the guest cycle and explain it?

**FIRST YEAR
II SEMESTER
CT & HM-203 ACCOMMODATION OPERATION-I**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Introduction to Hotel Industry – Classification of Hotels – Star rating of Hotels – Hotel Department – House keeping Department – Importance of Housekeeping – Responsibilities of Housekeeping Department – Organizational Structure – Housekeeping personnel personal attributes of Housekeeping staff.

Unit – II

Layout of the Department – Co-ordination with other departments – The professional Housekeeper – Housekeeping in other Institution – Managing Housekeeping Personal – Documents for Personal Management.

Unit – III

Determining staff strength – Recruiting – selecting – Hiring – Orienting – Training scheduling motivating employees – Performance appraisal – Time and Motivation Studies and Job Analysis – Team work and Leadership – Employee Welfare and Discipline.

Unit – IV

Contracts and outsourcing – Defining Outsourcing and contracts – When are outsourcing and contracts. Contract Services in housekeeping – When are outsourced service considered – Pricing of Contracts – Advantages and Disadvantages of outsourcing.

Unit – V

Planning Housekeeping operations – The Planning process – Daily routines and system – The Housekeeping Day – Leave Application procedure – Gate Pass Procedure.

PRACTICALS:

1. Floor Cleaning
2. Different Linen and Cleaning procedures – Bath Room cleaning
3. Cleaning procedure of carpet.
4. Bed making
5. Metals polishing methods and equipments.

REFERENCES:

1. Hotel, Hostel and hospital, housekeeping, Branson, Joan, Ce Lemox (Hodder and Stoughton), 2003
2. Housekeeping Supervision: Fellows, John (Pitman publishers)
3. Commercial Housekeeping and maintenance: Iris Jones (Stanley thornox Pub)

B.Sc. (CT & HM)
II-Semester
CT&HM 203 – ACCOMMODATION OPERATION-I
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write about Introduction to the hospitality industry:
2. Describe the star rating of hotels?
3. What is mean by importance of housekeeping.
4. Draw the Layout of housekeeping?
5. Write any five personal attributes of housekeeping staff?
6. Write any five amenities of housekeeping department
7. Define outsourcing and contracts?
8. Write the classification of hotels?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Describe the co-ordination with other departments.
(or)
b) Determine the staff recruiting and selecting?
10. a) Write the about the Job analysis?
(or)
b) When are out sourced services considered?
11. a) Describe the planning of housekeeping operations?
(or)
b) Write different types of documents for personal management?
12. a) Explain responsibilities of housekeeping department?
(or)
b) Advantages and disadvantages of out sourcing?
13. a) Explain the employee welfare and disciplines?
(or)
b) Write about organization structure in house keeping department.

**SECOND YEAR
III SEMESTER
CT&HM -301 PILGRIMAGE TOURISM AND HOSPITALITY
MANAGEMENT – II**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

India, its culture, demography, geography – its soil and rich history of Andhra Pradesh – and Role of Hospitality Management in Tourism.

Unit – II

Pilgrimage Tourism and Hospitality Management Pilgrim Tourism – Definition and Importance - Historical study of select Pilgrimage centres Tirumala and Tirupati – Sri Kalahasti – Srisailam – Simhachalam – Ahobalam – Vijayawada – Alampur – Pushpagir – Sriangam – HampiBadomi – Pabladakal – Tiruvananthapuram – Varanasi – Allahabad (Praying).

Unit – III

Historical study of select Buddhist and Jain Pilgrimage centres – Sarnath, Sanchi, Nagarjunakonda- Amaravathi, Sravanbelagola – Kolanupaka, Danavulapadu.

Unit – IV

Travel Agency – History and development of the concept of Travel Agency in India – role of Travel Agencies and Tourist Guides in promoting tourism in India – Tour operator and Partners of Tour Operators.

Unit – V

Tourist Accommodation – Various Categories – Hotels – Star Hotels – Heritage hotels – resorts – Private accommodation – Accommodation provided by religious institutions – paying guest – concept – Food and Beverages – Role of Hospitality and various Hotels.

PRACTICALS:

1. Tour to Pilgrimage centre – Map pointing.
2. Historical aspects of Tourism
3. Visit to Travel agency
4. Travel Agent in Tirupati
5. Case Study – 2 Nos. Observation

REFERENCES:

1. Tourism and cultural heritage of India – Achary Rao – Rose Publications.
2. The National Cultural of India – National Book Trust – Delhi 1959 – Hussain, A.A.
3. The wonder that was India – Basham A.L., Rope & Company (Publication) Delhi – 1985.
4. The culture and Art of India – MukharjeeR.K, Londaon – 1959.
5. Travel Agencies and Management communication India – 1963 – Agarwal – Surinvdra.

B.Sc. (CT & HM)
Second Year : III-Semester
CT&HM -301 PILGRIMAGE TOURISM AND HOSPITALITY MANAGEMENT - II
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write in detail about hotel categorization.
2. Write about Saranatha?
3. Give a brief note on heritage hotels?
4. Write a brief note on the history of Travel agency in India?
5. Write a detailed note on Srisailam?
6. Describe the greatness of Hampi?
7. What do you know about sravanabelogola?
8. Describe the accommodation provided by private agencies.

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Assess the role of tourist guide in promoting tourism in India?
(or)
b) Explain the Kolanupaka and Danavulapadu as Jain Pilgrim Centres?
10. a) Explain the contribution of Tourism for Andhra Pradesh Staet?
(or)
b) What is meant by pilgrimage Tourism? Analyze its importance?
11. a) Write down the concept and functions of Travel agency?
(or)
b) Describe various categories of Tourist accommodation?
12. a) Explain the importance of Varanasi and Allahabad?
(or)
b) Name the major Buddhist circuits in the state of A.P.?
13. a) Explain the concept and functions of travel agency?
(or)
b) Write detail about historical and religious aspects of Tirumala TirupatiDevasthanams.

**SECOND YEAR:
III SEMESTER
CT&HM-302 FOOD PRODUCTION - II**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Quantity food production – Principles of quantity cooking, equipment, menu planning, volume indenting, costing, problems and adjustment in terms of cooking time and temperatures.

Unit – II

Indian Regional Cooking styles (1)

Northern Indian cuisine – Moghlai, Avadh, (Dum puet), Punjabi, Kashmiri, History, Methodology, Equipment, Culinary terms – Tandoor – Make, Size of Tandoor fixing, Seasoning, Preparation of Indian Breads.

Unit – III

South Indian Cuisine – Hyderabadi, Kerala, Andhra, Tamil Nadu, Chettinad – History, Methodology, Equipment and Culinary Term.

Unit – IV

Indian Regional Cooking styles (2)

Eastern Indian Cuisine and North Eastern Cuisine, Bengal, Assam, Nagaland, Mizoram, Arunachal Pradesh – History, Methodology, Equipment, Culinary Terms. Western cuisine – Gujarathi, Rajasthani, Goan, Maharashtra – History, Methodology, Equipment Culinary terms.

Unit – V

Quantity cooking purchase and strategies – Purchase methods – Techniques – Storage techniques / Receiving techniques.

PRACTICALS:

1. Northern Indian Cuisine
2. Southern Indian Cuisine
3. Eastern Indian Cuisine
4. Western Indian Cuisine
5. Inventory Control

REFERENCES:

1. Theory of cooking – K. Arora
2. Mohimsethi&SurjeeMalhan – Catering Management. An integrated Approach second edition – Wiley Eastern Ltd. (Publisher)
3. Cooking with Indian Masters - Prasad
4. Modern cooking (Vol-I). Thangau E. Phillip 5th Edition, 2003.
5. Modern cookery by Chef ArrindSaraswat.

B.Sc. (CT & HM)
Second Year : III-Semester
CT&HM- 302 FOOD PRODUCTION-II
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write in detail about kitchen hygiene?
2. Explain the dry methods of cooking?
3. Write the cooking styles explain in detail?
4. State the Principles of cooking and explain?
5. Describe the equipment used in different cuisine?
6. Write in detail about Two states cuisines?
7. What is costing and explain detail?
8. What is grill room?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) What are the differences between perishable and non-perishable foods?
(or)
b) What is quantity cooking? Explain about different cooking methods.
10. a) Discuss the Principles of menu planning?
(or)
b) Enlist the equipment used in different cuisines?
11. a) What is food cost? Write the different control methods adopted for cost control?
(or)
b) What is menu Planning? Prepare a 7 Course menu in marriage party?
12. a) Write the difference between Palao and Biryani? Give recipes for each?
(or)
b) What are the principles of cooking write the importance of hygiene.
13. a) Explain the purchases methods following in Five Star Hotels
(or)
b) Any two recipes in Eastern Cuisine?

**SECOND YEAR
III SEMESTER
CT&HM -303 FOOD AND BEVERAGE SERVICE - II**

**Theory: 4 hrs/week
Practicals : 3 hrs/week**

THEORY:

Unit-I

Classification of Beverages into Alcoholic and Non-Alcoholic and their further breakup their respective categories.

Different Non-Alcoholic Beverages – Stimulating, refreshing and Nourishing drinks - Bar Management.

Unit – II

General Introduction of Wine, History and principal wine producing countries of the world. Types of wine and other classification, manufacturing of wine, Bottling, Labelling and Shipping of Wine.

Unit – III

Spirits – Meaning of Distillation, Spirit, Proof, American proof and conversions

Manufacture of Whiskey – Classification and Quality, Brand Names, Service of Whisky.

Manufacture of Brandy – Types, Brand Names and Service.

Unit – IV

Beer – History, Manufacture, Types, Storage and Service. Liquor – types, Classification, Methods of Manufacture and Service.

Unit – V

Cocktails – Mixed drinks – classification.

Cocktails and mock tails – definition – types methods of mixing.

Tobacco – types, storage, service

PRACTICALS:

1. Services of Tea, Coffee
2. Service of Wine
3. Services of Spirit and Equipment
4. Different types glassware and equipment
5. Services of cocktails, Mock tails.

REFERENCES:

1. The text of Food & Beverages Service – S. N. Bagchi& Anita Sharma, 1st Ed. Aman Publications, New Delhi (2004)
2. Food & Beverage Service – Vijay Dhawan – Frank Bros & Co., (Publisher) Ltd. New Delhi.
3. Food and Beverage Management – Bernard Devis, Andrew lock wood and sallay stone 3rd edition, published by Elsevier India Pvt. Ltd., New Delhi.
4. Professional Restaurant Service – John Willey & Sons, Inc.
5. Bartenders Guide – John J. Poister.

B.Sc. (CT & HM)
Second Year : III Semester
CT&HM-303 FOOD AND BEVERAGE SERVICE-II
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. What is fermentation? Where do and how do you implement in wine making?
2. What is distillation of write the different methods of distillation?
3. What is an alcoholic beverage give percentage of alcoholic of atleast 6 alcoholic drinks?
4. Explain what is menu and how do you plan a menu?
5. What are the mock tails? Explain with examples?
6. What are the attributes required in Food and Beverages Staff?
7. What is viticulture?
8. What is Whisky write in detail?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write the difference between cocktail and mocktail. Give two recipes of cocktail?
(or)
b) How is beer made write in detail the procedure and the alcoholic content of beer.
10. a) How do you classify alcoholic beverage? Explain with examples?
(or)
b) Explain wine and wine making methods? How do you classify wines?
11. a) Explain the process involved in making of red wine?
(or)
b) What are the terms used to denote the level of sweetness in the champagne write the terms used on the label to refer to the champagne produce?
12. a) What is distillation? Part Give the distillation process of Spirit?
(or)
b) What is sparkling wine? What are the various methods of making sparkling?
13. a) Write in detail about liqueurs and aperitifs.
(or)
b) What is whisky write in detail?

**SECOND YEAR
IV SEMESTER
CT&HM -401 TOURISM MARKETING-III**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Definition, Concept of Tourism Marketing – Marketing Tourism Products – Marketing Mix – Consumer Behaviour – Product life cycle – Pricing a Product – TQM – Integrating TQM in marketing and programmes.

Unit – II

Tourism marketing related to 5 A's (Attraction – Accessibility – Accommodation – Amenities – Activities). New trends in tourism - Health tourism, co-tourism and MICE – Principles in hospitality selling – AIDA model.

Unit – III

Advertising – Sales promotion publicity – market segment action (Demographic, Psychological and Behavioural segmentation) marketing strategies – Methods of marketing segments – Target Market – Selecting and Marketing for target market.

Unit – IV

Marketing skills for tourism – Development creativity – communication SMMR Model Communication – self motivation personality development – Team building – Need for market research and information system.

Unit – V

Economics of Tourism – Impact on National Income – Multiplier Effect Foreign exchange as revenue earner for government – factors effecting Tourism earnings.

REFERENCES:

1. Tourism Marketing – GPH panel of Experts – Gully Baba Publishing House (P) Ltd. 2009.
2. Tourism marketing – Roth Field CW
3. Marketing Management – Philip Kotter
4. Tourism and Travel Marketing – Jag Mohan Nagi
5. Airlines and Ticketing for Tourism – Jag Mohan Nagi
6. Francis Buttle (1995) Hotel and Food Service Marketing – A Managerial Approach – Cassell Education Ltd. London

B.Sc. (CT & HM)
Second Year : IV-Semester
CT&HM-401 Tourism Marketing -III
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Discuss the need for marketing in in the tourism industry?
2. Critically evaluate the role of consumer Behaviour in Tourism?
3. Explain on the Five A'S of Tourism marketing.
4. Eco Tourism is a new Phenomenon, Justify?
5. Explain the role of Team Building for a successful marketing campaign.
6. Write a short notes on contribution of tourism to the National Income?
7. Write importance of VISA's?
8. Describe Airline Ticketing?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Discuss in brief the factors for pricing of various tourism products.
(or)
b) Briefly write about the various strategies to be taken at various stage of the product life cycle?
10. a) Is MICE evolving? Critically evaluate the performance over the last ten years in India.
(or)
b) Identify the various parameters to lead a nation with successful medical tourism.
11. a) Explain the principles of personal selling AIDA Model.
(or)
b) Write in detail the various components of market segmentation.
12. a) Discuss the computer reservation system in Airline Ticketing
(or)
b) Write notes on: 1) ABC Codes 2) Manual Ticketing
13. a) Discuss the role of Tourism satellite Accounting (TSA) for evaluating success of a country/state tourism performance.
(or)
b) Explain SMMR Model of Communication.

**SECOND YEAR
IV SEMESTER
CT&HM-402 FRONT OFFICE-II**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Reservation Introduction – Reservation Terminology – Types of Room – Types of Rates and Plan – Meal Menus Related to plans – Other Rates – Sources of Reservations – Modes of Reservation – Types of Reservation – Manual System of Reservation by Phone – Automated systems – E-commerce.

Unit – II

Reception Introduction – Reception Terminology. Front Desk Counter – Support Devices – Assignment of Room – The morning Shift – Automated system – Other registration optimum – Upselling.

Unit – III

Uniformed service introduction – Lobby organization – Lobby Terminology – Bell Desk procedure – Other Duties Bell Desk Staff.

Unit – IV

Concierge Services Introduction – Role of a Concierge – Handling Mail – Handling Instored or Registered Mail and Courier Services – Handling Messages – plugging – Providing information – Function in the Hotel – Guest Rack.

Unit – V

Guest Relation executive Introduce – Organization of GRE – Important Department for GRE – Telecommunication Introduction – Types of exchange – Other communication Equipment – Organization of Telecommunication Department.

PRACTICALS:

1. Arrival & Departure procedures – Registration
2. Arrival & Departure and Discrepancy report
3. Group cancellation procedures.
4. Handling guest complaints.
5. Registration form
6. Group Check-in, checkout procedures

REFERENCES:

1. Front Office procedures- Michael L. Kasavenna (Fifth Edition) Richard Books.
2. Front Office Operation – Patrick J Marcru, Gail L Soloman, Jim DoogamPrentice Hall.
3. A Manual of Hotel Reception – Heeves and Medlik – Heinemann, London
4. Front Office Psychology – John Wiley INC - Hinderbrand
5. Front Office Management – John Wiley.

B.Sc. (CT & HM)
Second Year : IV-Semester
CT&HM-402 FRONT OFFICE - II
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write briefly about front office accounting?
2. Write the different modes of payments.
3. What are the types of account maintained in the front office accounting?
4. How does cashier handles the bills when it's a card payment?
5. Draw the model foreign exchange voucher of a hotel?
6. Explain briefly the front office accounting cycle?
7. Explain about the front office budgeting?
8. Write about the establishing room rates?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write the group registrations and the crew arrival procedure.
(or)
b) Write in detail the procedure for a VIP guest?
10. a) Explain the skills required to handle guests
(or)
b) Write in detail about night shift reception procedure.
11. a) Explain in detail about front office accounting
(or)
b) Write about maintenance of Guest arrival and departure register.
12. a) What items are recorded on a front office cash sheet? How does cash sheet help ensure internal control in the front office?
(or)
b) Why is forecasting important to front office professionals?
13. a) Write about Job description of front office professionals.
(or)
b) Write in detail explain types of room rates?

**SECOND YEAR
IV SEMESTER
CT&HM-403 ACCOMMODATION OPERATION-II**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Housekeeping Inventories – Cleaning Equipment – Cleaning equipment – Cleaning Agents – Guest supplies – Linen Uniforms – Composition, Care and Cleaning of Different Surfaces – Metals, Glass, Wood, Stone, Rubber.

Unit – II

Hotel Guest room importance to Guest – Types of Guest room – Guest room status – Guest Floor Rules – Guest room Furniture – Furniture fixtures and fittings, Beds, Mattresses and Soft Furnishes – Guest room Accessories – Placement of guest Supplies.

Unit – III

Cleaning Guest room – Types of Soil – Nature of soil Standards of Cleaning – The Science of Cleaning. The cleaning process – Cleaning public Areas – Entrances, lobbies, front desk, elevators, staircases, Guest Corridors, public rest room, Banquet Halls, Role of Supervisor – Function of Supervisors.

Unit – IV

Housekeeping control Desk – Co-ordination with other departments – handling telephone calls budgeting for housekeeping Expenses – Inventory Control and stock – Taking purchasing.

Unit – V

Textile terminology – Classification and Identification of Textile Fibres – Fabric Construction. Use of Textiles in Hotels. The linen and Uniform room – storage of Linen, Linen exchange – Par stock Laundry equipment – The Laundry Process – Stain Removal.

PRACTICALS:

1. Different types of stains removal
2. Washing of Linen, Cotton, Silk and Dry Cleaning
3. Washing of woollen labries.
4. Floor cleaning procedures for hard floor.
5. Cleaning of wall finishes
6. Cleaning of floor surfaces

REFERENCES:

1. Hotel & Hospital Housekeeping – Branson, Joan C and Lennex, Margaret, 2003.
2. Hotel Housekeeping Management – SudhirAndernes The McGraw – Hill Companies (Publication)
3. Hotel Housekeeping – G Raghu Balan – Smrithe, Raghu Balan – Oxford University – Published in India.
4. Housekeeping Training Manual – Sudhir Andrews
5. Professional Housekeeping – Schneider, MadilineTucher.

B.Sc. (CT & HM)
Second Year : IV-Semester
CT&HM-403 ACCOMMODATION OPERATION - II
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write in detail about different fibers giving example.
2. Write the standard sizes of bed linen.
3. Write briefly the skills required to handle guest.
4. Write the general procedure of washing linen.
5. Explain the floor polishing procedure.
6. Explain the cleaning of Chandelier.
7. Explain in detail about carpet cleaning
8. Write the aims of pest and rodent control.

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write the procedure for cleaning of domes and high attitude area and what are the safety measures taken.
(or)
b) Write the linen room and uniform room activities in detail.
10. a) Draw the layout of the housekeeping department and explain about the work units.
(or)
b) Explain the organization of a housekeeping department and describe the roles of personnel.
11. a) Explain the procedures for requisitioning fresh linen, guest and cleaning supplies.
(or)
b) Explain the methods of cleaning public area in a hotel.
12. a) What is a linen room? Elucidate the storage condition, tips and practices.
(or)
b) Explain about the equipment and accessories for linen and uniform rooms and procedures of stock taking.
13. a) Write about the different cleaning agents. Discuss the principles in selection.
(or)
b) Elucidate the different cleaning equipment and discuss the standard and specifications for their selection

SECOND YEAR
VI SEMESTER
CT&HM-601 FOOD PRODUCTION - III

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Lander work – responsibilities – Lander Chef and duties and common terms -
Continental cuisine: Countries included and their styles of cooking

Unit – II

Herbs and Wines used in cooking

Unit – III

Known about appetizers, Garnishes, Sandwiches – Different types of storages
managements in Hotels – Establishment and Kitchen Planning.

Unit – IV

Continental Cuisine: France, Italian, Chinese, Portuguese regional

Influence and specialities and recipes of above maintained cuisines

Unit – V

Spices and basic ingredients used, fats ,flour ,pastaSoups ,salads ,pancakes, sauces -
Meats, vegetables, Herbs ,utensil, grilling ,stewingPoaching ,oils, wine, shortbread

PRACTICALS:

1. Table Arrangements
2. Cutlery & Crockery
3. Production practicals (6)
4. Continental Cuisine: France, Italian, Chinese, Portuguese regional

REFERENCES:

1. Mordern cookery vol.i :Thangam Philip
2. mordern cookery vol ii :Thangam Philip
3. Continental Cooking: For the Indian PalatePaperback– 31 Dec 2003by [Chand Sur](#)
4. The Basics: The Techniques of Continental Cookingby[Filip Verheyden](#)

B.Sc. (CT & HM)
Second Year : VI-Semester
CT& HM-601 FOOD PRODUCTION - III
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. What is continental cookery?
2. Name the countries included in continental cooking?
3. Name the basic oil used in continental cooking?
4. Prepare a 7 course continental menu ?
5. What type of utensil are used in continental cooking?
6. How is continental cookery different from IndianCookery?
7. What is a pasta explain?
8. What is the importance of wine in continental cookery?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write the role of bread and pasta in continental cookery?
(or)
b) Write about wines and its role in continental cooking?
10. a) Write about different method of cooking used in continental cooking ?
(or)
b) Write in detail about the types of oil,herbs and saucesUsed in continental cooking?
11. a) Write about the 5 basic sauces ?
(or)
b) What is the importance of mis-en scene &mis-en placein any cuisine?
12. a) Write about French classical menu in detail?
(or)
b) Discuss about continental cookery in your point ofView?
13. a) What is the role of fruit ,vegetables and meat inContinental cookery?
(or)
b) Classify meat ?

**SECOND YEAR:
VI SEMESTER
CT&HM-602 FOOD AND BEVERAGE SERVICES - III**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Food and Beverage service outlet and maintenance of outlet - Description of layout of F & B outlet - Objectives of good layout - Planning of laying an outlet - Space requirement of various food and beverage service outlet and staff requirement.

Unit – II

Cost reducing methods - Need of training and importance - Total quality management -KOT
- Different types of registers used in Hotels

Unit – III

Define banquet and types of function to be held in banquets and staff - About the specimen of function confirmation form - Draw various table plan and explain seating arrangement - Outdoor catering -Planning and organizing of buffet - Different equipment required for buffet and guerdon service

Unit – IV

Different types of cutlery, crockery and glassware - Bar operation - Types of bars - Bar equipments - Planning of bar – Service of Wine - Beverage control - Taking order of alcoholic beverages - About transfer books, bill cards, requisition form- Cellar control.

Unit – V

Function catering – Banquets – Buffets – Arranging of Bar – Bar Manager – Duties Role – responsibilities – Execution of Functions – Banquet an Buffets – Services for formal functions – factors considering planning of buffets.

PRACTICALS:

1. Arrangements and Supervising formal function
2. Demonstration of crepe suzette & Banana Flambe
3. Supervising meals service for Lunch, Dinner, Buffet, Bar Operations
4. Services for formal functions

REFERENCES:

1. Modern cookery part 1 and 2
2. Basic banking S.D. Dubey
3. Food production manual - Sudhir Andrews
4. Food production

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM 602 – FOOD AND BEVERAGES SERVICE - III
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Give the organization of Snack Bar.
2. Describe the KOT
3. Different types of registers in restaurant
4. Write about classification of food and beverages
5. What do you meant by outdoor catering and explain
6. What type of equipment required of buffet services?
7. Write about different types of cutlery and crockery?
8. Explain Cellar Control

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Describe various food and beverages service outlet and staff requirement
(or)
b) Explain the training importance
10. a) Draw the various table plan and explain seating arrangements.
(or)
b) Write about bar equipments and uses
11. a) Explain the transfer books, bill cards, requisition forms.
(or)
b) Explain Job description of restaurant manager.
12. a) Write about basic etiquettes in food any service professional
(or)
b) How to arrangements of banquet hall.
13. a) Describe the fast food restaurant
(or)
b) Explain the bar planning.

**THIRD YEAR
VI SEMESTER
CT&HM-603 FRONT OFFICE MANAGEMENT - III**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Front Office cashier introduction – Duties of front office cashier – Key terms – Introduction Night Audit – Organization chart – Duties of Night Auditor – Task a night Auditor.

Unit – II

Yield management Introduction – Opportunity Analysis – Strategies and Tactics – Yield management - Key terms – Front Office Accounting – Types of Accounts – Non formal, Semi Formal and Fully Formal

Unit – III

Introduction to quality Guest service – total quality management – Practices in total quality management – Quality control circles. Business Process – Engineering.

Unit – IV

Human Resource Management – Human Resource Planning – Human Resource Development – Job Analysis – Recruitment – Selection – HR Challenges in Hospitality Industry – Employee presentation, Employee Motivation.

Unit – V

Safety and Security – Hotel security staff and system, Role of Front Office – Security and control of room keys – Fire safety – Classification of fire – Procedure in the Event of fire and accidents – Accidents in Hotels, Accident report – First Aid.

PRACTICALS:

1. Processing of Foreign Exchange
2. Passport, VISA procedures
3. Planning and Evaluating
4. Developing a service management programmes
5. Evaluating Room rates
6. Budgeting for operation forecasting room.

REFERENCES:

1. Front Office procedures – Michael L. Kasavana (Fifth Edition), 2003. Richard M Books. AH & LA, U.S.A.
2. A Manual of Hotel Reception – Heeves and Medlik, Heinemann, London.
3. Front Office Management – John Wiley
4. Case study in room operations and management Jeremy Hyton& Sue Baker.
5. Front Office Management – John Wiley

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM-603 FRONT OFFICE MANAGEMENT - III
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write short notes on potential bad debts.
2. Explain briefly the marketing concepts.
3. Write about control of bell boy and attitude
4. Write the procedures followed to a guest with scanty baggage.
5. Draw the format of guest history card and explain
6. Explain the concept of sales and marketing in relation to hospitality
7. Explain encashment certificate
8. Write short notes on landing permis.

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) What is guest history card and write the maintenance of guest history in detail with format.
(or)
b) Explain the different types of room rates and discount and discounting policy.
10. a) Explain the term hospitality and how do you relate the term “Hospitality cannot be touched or felt” in both front office and service sector.
(or)
b) Give the concept and importance of hospitality in today's fast developing society.
11. a) Explain in detail CVGR and TAV.
(or)
b) With the procedure of AP and EP
12. a) Write about room statistics (House Count, ARR, Rev PAR, ARP)
(or)
b) Who is right auditor? Give his duties and responsibilities
13. a) Explain about right auditor reports in detail
(or)
b) What are the files and formats maintained in bell desk?

**THIRD YEAR
VI SEMESTER
CT&HM-604 ACCOMMODATION OPERATION – III**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Ergonomics in Housekeeping – Dealing with Emergencies – Scanty Baggage – Guest and Employee Theft – Sickness and Death – Lost and found articles.

Unit – II

Pest control and waste disposal – Common pests and their control – Integrated pest management. Waste disposal – Internal environment Noise - Air – Conditioning – Light.

Unit – III

Objectives of Interior Design – Basic types of Design – Elements of Design – Principles of Design – Units of Design – Designing for the physically challenged Planning in Star Hotels.

Unit – IV

Interior Decorations – Colour – Lighting – Floor coverings and Finishes – types, Characteristics and cleaning of Floor coverings, carpets, importance of floor maintenance – ceilings and their maintenance wall coverings – windows and window treatments.

Unit – V

Flower arrangement in Hotels – Flower Arrangement – Basis – Designing Flower Arrangement Japanese/Oriental Flower Arrangement – Common Flower and Foliage. Essential Components of Horticulture Land scaping – Indoor Plants – Bonsai in Hotel properties.

PRACTICALS:

1. Principles of Flower arrangement.
2. Types of patterns, Equipment, Tools and use of dry plant material
3. Cleaning equipments
4. Cleaning Agents
5. Cleaning methods
6. Control of Odours

REFERENCES:

1. Hospitality today – An introduction – Row M. Angelos, Andrew N. Vladimir
2. Hotel Housekeeping operations and management Second Edition – Smritee Raghubalan – Oxford university press 2007-, 2009
3. Professional Housekeeping – Schneider, Madillou, Tucher
4. Housekeeping management – Margaret Kappa – AH & LS, USA
5. Commercial Housekeeping and maintenance – Iris Jones (Stanly Thorw Pub) o

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM-604 ACCOMMODATION OPERATION - III
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Write the importance of hygiene in hotel industry.
2. Write the advantages and disadvantages of contract maintenance
3. Write the advantages of carpets.
4. Explain the purchase procedure for guest supplies
5. Write the cleaning procedures or schedule adopted in housekeeping department.
6. Discuss the different cleaning agents
7. What is a duty rooster
8. Write the purchase procedure?

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Explain the functions of HR explain the selection process of staff for house keeping department.
(or)
b) Write the measures taken for Inventory control
10. a) Classify the different wall covering and write how do you maintain them
(or)
b) What are the basic components of a carpet? Classify the different types of carpets.
11. a) Write briefly the importance of maintenance in hotel industry
(or)
b) Draw the organisational chart of maintenance department and explain the duties.
12. a) What is Horticulture and explain its importance of it in hotel.
(or)
b) What are the advantages and disadvantages of carpets.
13. a) Discuss the sanitary procedure to be followed by house keeping personal
(or)
b) Discuss the role and importance of hygiene in hotel industry

**THIRD YEAR
VI SEMESTER
CT&HM-605 HOTEL LAW**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Law & Society - Meaning and definition of law -Classification of law

Unit – II

Hotel and restaurants licenses - License permit, procedure of obtaining, renewing licenses -
Suspension and termination of licenses -List of licenses required to open hotel & Operate
restaurants

Unit – III

Law relating to hotel guest relation, hotel and lodging rates control -Definition of law - Fair
rate - Hotel & Lodging house - Manager of hotel - Owner of lodging house - Paying guest -
Premises

Unit – IV

Tenant & Tenement - Appointment of controller - Fixation of fair rates - Refusal of
accommodation - Eviction of a guest from hotel rooms - Duties, rights, responsibilities of
Innkeeper towards guest - Innkeeper lien

Unit – V

Shops & establishments act as applicable to hotel and catering establishments -Definition
of – Apprentice – Child – Closed - Commercial establishments - Provision regarding opening
and closing hours - Spread over weekly off & leaves, health, safety and hygiene provision

REFERENCES:

1. Basic Hotel Law – Werner, petter
2. Hotel Law operation – Patrick Jomoreo
3. Hotel Law manual – SudheerAnrews
4. Hospitality today-An introduction-Rocu M. Angelo & Andrew N. Vladmir

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM- 605 HOTEL LAW
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Food standards in India
2. Write about the termination of licenses of restaurants
3. Write about the manager of a hotel.
4. Discuss about the establishment Act Applicable to Creating establishment.
5. Write about Welfare of Worker
6. Discuss about Show Cause Notice
7. PFA standards explain
8. What is consumer Protection

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Explain in detail about food adulteration
(or)
b) Write about the responsibilities of Food inspector
10. a) Explain the rights and duties concerning to guest safety.
(or)
b) Discuss the law relating to Hotel Guest relationship
11. a) Write about the implied conditions and warrantee of Sale Goods Act.
(or)
b) Discuss about manufacturing process and Health, safety of workers
12. a) Write about the prevention and control of air a pollution Act. 1981
(or)
b) Explain about consumer protection counsels and Consumer Redresal Agencies.
13. a) Discuss the eriction of guest from hotel room
(or)
b) Write about food inspector duties.

**THIRD YEAR
VI SEMESTER
CT&HM-606 TRAVEL AND TOUR MANAGEMENT -IV**

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Travel agency – documents required for International travel – Passports – Visa-travel insurance – Foreign currency – Baggage – Reasons for Travel - Known about tour Management and operation Impact system and its growth.

Unit – II

Tourism world wide organizations - WTO-IATA-PATA-ICAO-TAAI-UFTAA The Chicago convention – Bilateral Agreements – Warsaw conversion.

Unit – III

Computers Reservation System-types of CRS –Airline Ticketing –ABC codes –Flight schedule-types of fares –fare calculation – Manual Ticketing-automated Ticketing.

Unit – IV

Tour operations – Definition – Package tours – types of tour packages – Scope of tour package – Itinerary rules & regulations – Itinerary planning with examples.

Unit – V

Marketing a package tour – tour brochures - Activities in tour operation – tour pricing – tour operator's Responsibilities and his role in hospitality Management

PRACTICALS:

1. Visit to tour Operation (Travel Agency)
2. Itinerary planning – Plan an Itinerary programme
3. Visit to Airline Office – Ticketing of Aspects
4. International Travel – From – Passport Procedures – Visit.

REFERENCES:

1. An Introduction to Travel and Tourism – Jag Mohan Nagi
2. Air Lines and ticketing for tourism – Jag Mohan Nagi
3. IATA ticketing manual – Ticketing course material

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM- 606 TRAVEL AND TOUR MANAGEMENT- IV
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions
Each question carries 5 marks

5 × 5 = 25 M

1. Describe the TAAI
2. What is the importance of VISA
3. Explain the Chicago Convention
4. Describe Airline Ticketing
5. What is meant by package Tour? Explain
6. How to market a package tour.
7. Discuss the activities of Tour Operation.
8. Explain UFTAA

Section-B

Answer ALL Questions
Each question carries 10 marks

5 × 10 = 50 M

9. a) Write about Travel Agency
(or)
b) What are documents required for international travel? Explain
10. a) Explain WTO
(or)
b) Write notes on i) PATA; ii) IATA
11. a) Discuss the computer reservation system in Air Line Ticketing
(or)
b) Write Notes on: i) ABC codes ii) Manual Ticketing
12. a) What are the responsibilities of Tour Operator to organize different types of tours.
(or)
b) Analyze the scope of a package tour. Define the package tour
13. a) History of Tourism and Hospitality
(or)
b) Explain history of travel in India.

SRI VENKATESWARA UNIVERSITY
DEPARTMENT OF CT& HM (Catering Tourism & Hotel Management)
 Choice Based Credit System (C.B.C.S) Syllabus and Scheme Of Examination
 Course: BSc (WITH EFFECT FROM THE ACADEMIC YEAR 2015 -2016) Subject: CT&HM

Semester VI	Part 2	CTHM 601	Food production -III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 602	Food Beverage Service - III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 603	Front office Management - III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 604	Accommodation Operation - III	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
		CTHM 605	Hotel Law	4	-	4	25	75	100
			Seminar	-	3	2	-	50	50
		CTHM 606	Travel & Tour Management- IV	4	-	4	25	75	100
			Practicals	-	3	2	-	50	50
	SK		Communication Practice – III (Writing Skills)	1	2	2	25	25	50
			Total Marks	25	19	38			950

THIRD YEAR
VI SEMESTER CT&HM-601 FOOD PRODUCTION - III

Theory: 4 hrs/week Practicals : 3 hrs/week

THEORY:

Unit-I

Lander work – responsibilities – Lander Chef and duties and common terms - Continental cuisine: Countries included and their styles of cooking

Unit – II

Herbs and Wines used in cooking

Unit – III

Known about appetizers, Garnishes, Sandwiches – Different types of storages managements in Hotels – Establishment and Kitchen Planning.

Unit – IV

Continental Cuisine: France, Italian, Chinese, Portuguese regional
Influence and specialities and recipes of above maintained cuisines

Unit – V

Spices and basic ingredients used, fats, flour, pastaSoups, salads, pancakes, sauces - Meats, vegetables, Herbs, utensil, grilling, stewing Poaching, oils, wine, shortbread

PRACTICALS:

1. Table Arrangements
2. Cutlery & Crockery
3. Production practicals (6)
4. Continental Cuisine: France, Italian, Chinese, Portuguese regional

REFERENCES:

1. Modern cookery vol.i :Thangam Philip
2. modern cookery vol ii :Thangam Philip
3. Continental Cooking: For the Indian PalatePaperback– 31 Dec 2003by Chand Sur
4. The Basics: The Techniques of Continental Cooking by Filip Verheyden

B.Sc. (CT & HM) Second Year : VI-Semester

THIRD YEAR

CT& HM-601 FOOD PRODUCTION - III Model Question Paper

Time : 3 Hrs Marks : 75

Section-A

Answer any Five Questions Each question carries 5 marks

5 × 5 = 25 M

1. What is continental cookery?
2. Name the countries included in continental cooking?
3. Name the basic oil used in continental cooking?
4. Prepare a 7 course continental menu ?
5. What type of utensil are used in continental cooking?
6. How is continental cookery different from IndianCookery?
7. What is a pasta explain?
8. What is the importance of wine in continental cookery?

Section-B

Answer ALL Questions Each question carries 10 marks

5 × 10 = 50 M

9. a) Write the role of bread and pasta in continental cookery
(or)
b) Write about wines and its role in continental cooking?
10. a) Write about different method of cooking used in continental cooking ?
(or)
b) Write in detail about the types of oil,herbs and saucesUsed in continental cooking?
11. a) Write about the 5 basic sauces
(or)
b) What is the importance of mis-en scene &mis-en placein any cuisine?
12. a) Write about French classical menu in detail?
(or)
b) Discuss about continental cookery in your point ofView?
13. a) What is the role of fruit ,vegetables and meat inContinental cookery?
(or)
b) Classify meat ?

THIRD YEAR

VI SEMESTER CT&HM-602 FOOD AND BEVERAGE SERVICES - III

Theory: 4 hrs/week

Practicals : 3 hrs/week

THEORY:

Unit-I

Food and Beverage service outlet and maintenance of outlet - Description of layout of F & B outlet - Objectives of good layout - Planning of laying an outlet - Space requirement of various food and beverage service outlet and staff requirement.

Unit – II

Cost reducing methods - Need of training and importance - Total quality management -KOT - Different types of registers used in Hotels

Unit – III

Define banquet and types of function to be held in banquets and staff - About the specimen of function confirmation form - Draw various table plan and explain seating arrangement - Outdoor catering -Planning and organizing of buffet - Different equipment required for buffet and guerdon service

Unit – IV

Different types of cutlery, crockery and glassware - Bar operation - Types of bars - Bar equipments - Planning of bar – Service of Wine - Beverage control - Taking order of alcoholic beverages - About transfer books, bill cards, requisition form- Cellar control.

Unit – V

Function catering – Banquets – Buffets – Arranging of Bar – Bar Manager – Duties Role – responsibilities – Execution of Functions – Banquet an Buffets – Services for formal functions – factors considering planning of buffets.

PRACTICALS:

1. Arrangements and Supervising formal function
2. Demonstration of crepe suzette & Banana Flambe
3. Supervising meals service for Lunch, Dinner, Buffet, Bar Operations
4. Services for formal functions

REFERENCES:

1. Modern cookery part 1 and 2
2. Basic banking S.D. Dubey
3. Food production manual - Sudhir Andrews
4. Food production

B.Sc. (CT & HM) Third Year : VI-Semester

CT&HM 602 – FOOD AND BEVERAGES SERVICE - III Model Question Paper

Time : 3 Hrs

Section-A

Marks : 75

Answer any Five Questions Each question carries 5 marks

5 × 5 = 25 M

1. Give the organization of Snack Bar.
2. Describe the KOT
3. Different types of registers in restaurant
4. Write about classification of food and beverages
5. What do you meant by outdoor catering and explain
6. What type of equipment required of buffet services?
7. Write about different types of cutlery and crockery?
8. Explain Cellar Control

Section-B

Answer ALL Questions Each question carries 10 marks

5 × 10 = 50 M

9. a) Describe various food and beverages service outlet and staff requirement

(or)

- b) Explain the training importance

10. a) Draw the various table plan and explain seating arrangements.

(or)

- b) Write about bar equipments and uses

11. a) Explain the transfer books, bill cards, requisition forms.

(or)

- b) Explain Job description of restaurant manager.

12. a) Write about basic etiquettes in food any service profession

(or)

- b) How to arrangements of banquet hall.

13. a) Describe the fast food restaurant

(or)

- b) Explain the bar planning.

THIRD YEAR

VI SEMESTER CT&HM-603 FRONT OFFICE MANAGEMENT – III

**Theory: 4 hrs/week
Practicals : 3 hrs/week**

THEORY:

Unit-I

Front Office cashier introduction – Duties of front office cashier – Key terms – Introduction Night Audit – Organization chart – Duties of Night Auditor – Task a night Auditor.

Unit – II

Yield management Introduction – Opportunity Analysis – Strategies and Tactics – Yield management - Key terms – Front Office Accounting – Types of Accounts – Non formal, Semi Formal and Fully Formal

Unit – III

Introduction to quality Guest service – total quality management – Practices in total quality management – Quality control circles. Business Process – Engineering.

Unit – IV

Human Resource Management – Human Resource Planning – Human Resource Development – Job Analysis – Recruitment – Selection – HR Challenges in Hospitality Industry – Employee presentation, Employee Motivation.

Unit – V

Safety and Security – Hotel security staff and system, Role of Front Office – Security and control of room keys – Fire safety – Classification of file – Procedure in the Event of fire and accidents – Accidents in Hotels, Accident report – First Aid.

PRACTICALS:-

1. Processing of Foreign Exchange
2. Passport, VISA procedures
3. Planning and Evaluating
4. Developing a service management programmes
5. Evaluating Room rates
6. Budgeting for operation forecasting room.

REFERENCES:

1. Front Office procedures – Michael L. Kasavana (Fifth Edition), 2003. Richard M Books. AH & LA, U.S.A.
2. A Manual of Hotel Reception – Heeves and Medlik, Heinemann, London.
3. Front Office Management – John Wiley
4. Case study in room operations and management Jeremy Hyton& Sue Baker.
5. Front Office Management – John Wiley

B.Sc. (CT & HM) Third Year : VI-Semester
CT&HM-603 FRONT OFFICE MANAGEMENT - III

Model Question Paper

Time : 3 Hrs Marks : 75

Section-A

Answer any Five Questions Each question carries 5 marks

5 × 5 = 25 M

1. Write short notes on potential bad debts.
2. Explain briefly the marketing concepts.
3. Write about control of bell boy and attitude
4. Write the procedures followed to a guest with scanty baggage.
5. Draw the format of guest history card and explain
6. Explain the concept of sales and marketing in relation to hospitality
7. Explain encashment certificate
8. Write short notes on landing permis.

Section-B

Answer ALL Questions Each question carries 10 marks

5 × 10 = 50 M

9. a) What is guest history card and write the maintenance of guest history in detail with format.

(or)

- b) Explain the different types of room rates and discount and discounting policy.

10. a) Explain the term hospitality and how do you relate the term "Hospitality cannot be touched or felt" in both front office and service sector.

(or)

- b) Give the concept and importance of hospitality in today's fast developing society.

11. a) Explain in detail CVGR and TAV.

(or)

- b) With the procedure of AP and EP

12. a) Write about room statistics (House Count, ARR, Rev PAR, ARP)

(or)

- b) Who is right auditor? Give his duties and responsibilities

13. a) Explain about right auditor reports in detail

(or)

- b) What are the files and formats maintained in bell desk?

THIRD YEAR
VI SEMESTER CT&HM-604
ACCOMMODATION OPERATION – III

Theory:4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Ergonomics in Housekeeping – Dealing with Emergences – Scanty Baggage – Guest and Employee Theft – Sickness and Death – Lost and found articles.

Unit – II

Pest control and waste disposal – Common pests and their control – Integrated pest management. Waste disposal – Internal environment Noise - Air – Conditioning – Light.

Unit – III

Objectives of Interior Design – Basic types of Design – Elements of Design – Principles of Design – Units of Design – Designing for the physically challenged Planning in Star Hotels.

Unit – IV

Interior Decorations – Colour – Lighting – Floor coverings and Finishes – types, Characteristics and cleaning of Floor coverings, carpets, importance of floor maintenance – ceilings and their maintenance wall coverings – windows and window treatments.

Unit – V

Flower arrangement in Hotels – Flower Arrangement – Basis – Designing Flower Arrangement Japanese/Oriental Flower Arrangement – Common Flower and Foliage. Essential Components of Horticulture Land scaping – Indoor Plants – Bonsai in Hotel properties.

PRACTICALS:-

1. Principles of Flower arrangement.
2. Types of patterns, Equipment, Tools and use of dry plant material
3. Cleaning equipments
4. Cleaning Agents
5. Cleaning methods
6. Control of Odours

REFERENCES:

1. Hospitality today – An introduction – Row M. Angelos, Andrew N. Vladimir
2. Hotel Housekeeping operations and management Second Edition – Smritee Raghubalan – Oxford university press 2007-, 2009.
3. Professional Housekeeping – Schneider, Madillou, Tucher
4. Housekeeping management – Margaret Kappa – AH & LS, USA
5. Commercial Housekeeping and maintenance – Iris Jones (StanlyThorw Pub)

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM-604 ACCOMMODATION OPERATION – III
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions Each question carries 5 marks

5 × 5 = 25 M

1. Write the importance of hygiene in hotel industry.
2. Write the advantages and disadvantages of contract maintenance
3. Write the advantages of carpets.
4. Explain the purchase procedure for guest supplies
5. Write the cleaning procedures or schedule adopted in housekeeping department.
6. Discuss the different cleaning agents
7. What is a duty rooster
8. Write the purchase procedure?

Section-B

Answer ALL Questions

Each question carries 10 marks

5 × 10 = 50 M

9. a) Explain the functions of HR explain the selection process of staff for house keeping department.
(or)
b) Write the measures taken for Inventory control
10. a) Classify the different wall covering and write how do you maintain them
(or)
b) What are the basic components of a carpet? Classify the different types of carpets.
11. a) Write briefly the importance of maintenance in hotel industry
(or)
b) Draw the organisational chart of maintenance department and explain the duties.
12. a) What is Horticulture and explain its importance of it in hotel.
(or)
b) What are the advantages and disadvantages of carpets.
13. a) Discuss the sanitary procedure to be followed by house keeping personal
(or)
b) Discuss the role and importance of hygiene in hotel industry

**THIRD YEAR
VI SEMESTER
CT&HM-605 HOTEL LAW**

**Theory: 4 hrs/week
Practicals : 3 hrs/week**

THEORY:

Unit-I

Law & Society - Meaning and definition of law -Classification of law

Unit – II

Hotel and restaurants licenses - License permit, procedure of obtaining, renewing licenses - Suspension and termination of licenses -List of licenses required to open hotel & Operate restaurants

Unit – III

Law relating to hotel guest relation, hotel and lodging rates control -Definition of law - Fair rate - Hotel & Lodging house - Manager of hotel - Owner of lodging house - Paying guest - Premises

Unit – IV

Tenant & Tenement - Appointment of controller - Fixation of fair rates - Refusal of accommodation - Eviction of a guest from hotel rooms - Duties, rights, responsibilities of Innkeeper towards guest - Innkeeper lien

Unit – V

Shops & establishments act as applicable to hotel and catering establishments - Definition of – Apprentice – Child – Closed - Commercial establishments - Provision regarding opening and closing hours - Spread over weekly off & leaves, health, safety and hygiene provision

REFERENCES:

1. Basic Hotel Law – Werner, petter
2. Hotel Law operation – Patrick Jomoreo
3. Hotel Law manual – SudheerAnrews
4. Hospitality today-An introduction-Rocu M. Angelo & Andrew N. Vladmir

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM- 605 HOTEL LAW
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions Each question carries 5 marks

5 × 5 = 25 M

1. Food standards in India
2. Write about the termination of licenses of restaurants
3. Write about the manager of a hotel.
4. Discuss about the establishment Act Applicable to Creating establishment.
5. Write about Welfare of Worker
6. Discuss about Show Cause Notice
7. PFA standards explain
8. What is consumer Protection

Section-B

Answer ALL Questions Each question carries 10 marks

5 × 10 = 50 M

9. a) Explain in detail about food adulteration
(or)
b) Write about the responsibilities of Food inspector
10. a) Explain the rights and duties concerning to guest safety.
(or)
b) Discuss the law relating to Hotel Guest relationship
11. a) Write about the implied conditions and warrantee of Sale Goods Act.
(or)
b) Discuss about manufacturing process and Health, safety of workers
12. a) Write about the prevention and control of air a pollution Act. 1981
(or)
b) Explain about consumer protection counsels and Consumer Redresal Agencies.
13. a) Discuss the eriction of guest from hotel room
(or)
b) Write about food inspector duties.

THIRD YEAR
VI SEMESTER CT&HM-606
TRAVEL AND TOUR MANAGEMENT -IV

Theory: 4 hrs/week
Practicals : 3 hrs/week

THEORY:

Unit-I

Travel agency – documents required for International travel – Passports – Visa-travel insurance – Foreign currency – Baggage – Reasons for Travel - Known about tour Management and operation Impact system and its growth.

Unit – II

Tourism world wide organizations - WTO-IATA-PATA-ICAO-TAAI-UFTAA The Chicago convention – Bilateral Agreements – Warsaw convention.

Unit – III

Computers Reservation System-types of CRS –Airline Ticketing –ABC codes –Flight schedule-types of fares –fare calculation – Manual Ticketing-automated Ticketing.

Unit – IV

Tour operations – Definition – Package tours – types of tour packages – Scope of tour package – Itinerary rules & regulations – Itinerary planning with examples.

Unit – V

Marketing a package tour – tour brochure - Activities in tour operation – tour pricing – tour operator's Responsibilities and his role in hospitality Management

PRACTICALS:

1. Visit to tour Operation (Travel Agency)
2. Itinerary planning – Plan an Itinerary programme
3. Visit to Airline Office – Ticketing of Aspects
4. International Travel – From – Passport Procedures – Visit.

REFERENCES:

1. An Introduction to Travel and Tourism – Jag Mohan Nagi
2. Air Lines and ticketing for tourism – Jag Mohan Nagi
3. IATA ticketing manual – Ticketing course material

B.Sc. (CT & HM)
Third Year : VI-Semester
CT&HM- 606
TRAVEL AND TOUR MANAGEMENT- IV
Model Question Paper

Time : 3 Hrs

Marks : 75

Section-A

Answer any Five Questions Each question carries 5 marks

5 × 5 = 25 M

1. Describe the TAAI
2. What is the importance of VISA
3. Explain the Chicago Convention
4. Describe Airline Ticketing
5. What is meant by package Tour? Explain
6. How to market a package tour.
7. Discuss the activities of Tour Operation.
8. Explain UFTAA

Section-B

Answer ALL Questions

Each question carries 10 marks

5 × 10 = 50 M

9. a) Write about Travel Agency

(or)

b) What are documents required for international travel? Explain

10. a) Explain WTO

(or)

b) Write notes on i) PATA; ii) IATA

11. a) Discuss the computer reservation system in Air Line Ticketing

(or)

b) Write Notes on: i) ABC codes ii) Manual Ticketing

12. a) What are the responsibilities of Tour Operator to organize different types of tours.

(or)

b) Analyze the scope of a package tour. Define the package tour

13. a) History of Tourism and Hospitality

(or)

b) Explain history of travel in India

Syllabus

Paper - III: Cell Biology, Genetics, Ecology and Biodiversity
(Total Hours of Teaching: 90 @ 3 h / Week)

Unit - I: Cell Biology

(22 h)

1. Plant cell envelopes: Ultra structure of cell wall, molecular organisation of cell membranes. (3 h)
2. Nucleus: Ultrastructure, Nucleic acids - Structure and replication of DNA; types and functions of RNA. (7 h)
3. Chromosomes: Morphology, organisation of DNA in a chromosome, Euchromatin and Heterochromatin. Karyotype. (7 h)
4. Special types of chromosomes: Lampbrush, polytene and B - chromosomes. (2 h)
5. Cell division: Cell cycle and its regulation; (mitosis, meiosis for practical observation) (3 h)

Unit - II: Genetics

(22 h)

6. Mendelism: Laws of inheritance. Genetic interactions - Epistasis, complementary, supplementary and inhibitory genes. (4 h)
7. Linkage and crossing over: A brief account, construction of genetic maps - 2 point and 3 point test cross data. (4 h)
8. Mutations: Chromosomal aberrations - structural and numerical changes; Gene mutations, transposable elements. (5 h)
9. Gene Expression: Organisation of gene, transcription, translation, mechanism and regulation of gene expression in prokaryotes (Lac and Trp Operons). (7 h)
10. Extra nuclear genome: Mitochondrial and plastid DNA, plasmids. (2 h)

Unit - III: Ecology

(25 h)

11. Concept and components of Ecosystem. Energy flow, food chains, food webs, ecological pyramids. (7 h)
12. Plants and environment: Ecological factors - Climatic (light and temperature), edaphic. Ecological adaptations of plants. (8 h)
13. Population ecology: Natality, mortality, growth curves, ecotypes, ecads. (3 h)
14. Community ecology: Frequency, density, cover, life forms, biological spectrum, ecological succession (Hydrosere, Xerosere). (5 h)
15. Production ecology: Concepts of productivity, GPP, NPP, CR (Community Respiration) and secondary production, P/R ratio and Ecosystems. (2 h)

Unit - IV: Biodiversity and Conservation

(21 h)

- Biodiversity: Concepts, Convention on Biodiversity - Earth Summit. Types of biodiversity. (4 h)
16. Levels, threats and value of Biodiversity. (4 h)
 17. Hot spots of India - Endemism, North Eastern Himalayas, Western Ghats. (4 h)
 18. Agro-biodiversity: Vavilov centres of crop plants. (3 h)
 19. Principles of conservation: IUCN threat-categories, RED data book - threatened & endangered plants of India. Role of organisations in the conservation of Biodiversity - IUCN, UNEP, WWF, NBPGR, NBD. (6 h)

Suggested Readings:

- Bharucha, E. 2005. Textbook of Environmental Studies for Undergraduate Courses. Universities Press (India) Private Limited, Hyderabad.
- Fukui, K. and S. Nakayama. 1996. Plant Chromosomes: Laboratory Methods. CRC Press, Boca Raton, Florida.
- Harris, N. and K. J. Oparka. 1994. Plant Cell Biology: A Practical Approach. IRL Press at University Press, Oxford, UK.
- Khitoliya, R. K. 2007. Environmental Pollution - Management and Control for Sustainable

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(P.T.O)

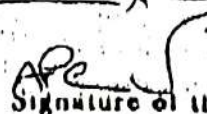
- Kormondy, E. 1989. Concepts of Ecology (3rd Ed.). Prentice Hall of India, New Delhi.
- Kothari, A. 1997. Understanding Biodiversity: Life, Sustainability and Equity: Tracts for the Times. H. Orient Longman Ltd., New Delhi.
- Michael, S. 1996. Ecology. Oxford University Press, London.
- Mishra, D. D. 2008. Fundamental Concepts in Environmental Studies. S. Chand & Company Ltd., New Delhi.
- Odum, E. P. 1983. Basics of Ecology. Saunders International Students Edition, Philadelphia.
- Pandey, B. P. 2007. Botany for Degree Students: Diversity of Microbes, Cryptogams, Cell Biology and Genetics. S. Chand & Company Ltd., New Delhi.
- Sharma, P. D. 1989. Elements of Ecology. Rastogi Publications, Meerut.
- Sharma, A. K. and A. Sharma. 1999. Plant Chromosomes: Analysis, Manipulation and Engineering. Harwood Academic Publishers, Australia.
- Shukla, R. S. and P. S. Chandel. 2007. Cytogenetics, Evolution, Biostatistics and Plant Breeding. S. Chand & Company Ltd., New Delhi.
- Singh, H. R. 2005. Environmental Biology. S. Chand & Company Ltd., New Delhi.
- Snustad, D. P. and M. J. Simmons. 2000. Principles of Genetics. John Wiley & Sons, Inc., U S A
- Strickberger, M. W. 1990. Genetics (3rd Ed.), Macmillan Publishing Company.
- Verma, P. S. and V. K. Agrawal. 2004. Cell Biology, Genetics, Molecular Biology, Evolution and Ecology. S. Chand & Company Ltd., New Delhi.
- Verma, P. S. and V. K. Agrawal. 2006. Genetics. S. Chand & Company Ltd., New Delhi.

Practical - III: Cell Biology, Genetics, Ecology and Biodiversity

(Total Hours of Laboratory Exercises: 90 @ 3 h / Week in 30 Sessions)

Suggested Laboratory Exercises:

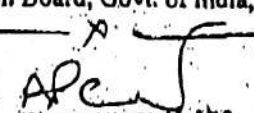
1. Study of various stages of mitosis using cytological preparation of Onion root tips (6 h)
2. Study of various stages of meiosis using cytological preparation of Onion flower buds (12 h)
3. Study of polytene chromosomes using cytological preparation of salivary glands from *Chironomus* / prepared slides / photographs (3 h)
4. Study on the ultra structure of cell organelles using electron microphotographs (6 h)
5. Solving genetic problems related to Monohybrid, (two) Dihybrid ratio (two) and interaction of genes (six) (minimum of eight problems). (18 h)
6. Construction of linkage maps; two point test cross (three problems) (6 h)
7. Knowledge of ecological instruments: Working principles and applications of Hygrometer, rain gauge, anemometer, altimeter, light meter, wet and dry bulb thermometer (with the help of Equipment / diagrams / photographs). (6 h)
8. Determination of soil texture (composition of clay, sand, silt etc. by sieve method.) and p^H (6 h)
9. Study of morphological and anatomical characteristics of plant communities using locally available plant species: Hydrophytes (*Elodea* Root, *Hydrilla* Stem, *Nymphaea* Petiole), Xerophytes (*Casuarina* Anatomy) and *Opuntia*, *Euphorbia antillarum* Morphology) and Halophytes (*Rhizophora*, and *Avicennia* Root). (12 h)
10. Detailed study on flora of a local fresh water or aquaculture pond. (6 h)
11. Geographical spotting of certain endemic and endangered plant species of AP. (3 h)
12. Minimum of two field visits to local areas of ecological / conservation of biodiversity importance (Sacred grove / Reserved forest / Botanical garden / Zoo Park / Lake etc.). (6 h)


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18. Horticulture techniques: Introduction, Cultivation of ornamental and vegetable crops, Bonsai and landscaping (4 h)
19. Floriculture: Introduction. Importance of green house, polyhouse, insect chamber, shade nets; Micro irrigation systems. Floriculture potential and its trade in India (4 h)
20. Vegetative Propagation of plants: Stem, root and leaf cuttings. Layering and bud grafting. Role of plant growth regulators in horticulture. (4 h)

Suggested Readings:

- Adams, C. R., K. M. Banford and M. P. Early. 1993. Principles of Horticulture. Butterworth Heinemann Ltd., London.
- Agrawal, P. K. 1993. Hand Book of Seed Technology. Dept. of Agriculture and Cooperation. National Seed Corporation Ltd., New Delhi.
- Balasubramanian, D., C. F. A. Bryce, K. Dharmalingam, J. Green and K. Jayaraman. 2004. Biotechnology. Universities Press (India) Private Limited, Hyderabad.
- Bedell, Y. E. Seed Science and Technology. Indian Forest Species. Allied Publishers Limited. New Delhi.
- Channarayappa. 2007. Molecular Biotechnology - Principles and Practices. Universities Press (India) Private Limited, Hyderabad.
- Chawala, H. S. 2002. Introduction to Plant Biotechnology. Oxford & IBH Publishing Company, New Delhi.
- Dubey, R. C. 2001. A Textbook of Biotechnology. S. Chand & Company Ltd., New Delhi.
- Edmond, J. B., T. L. Senn, F. S. Adrows and R. J. Halfacre. 1977. Fundamentals of Horticulture (4th Ed.). Tata McGraw-Hill, New Delhi.
- Gorer, R. 1978. The Growth of Gardens. Faber and Faber Ltd., London.
- Hartman, H. T. and D. E. Kestler. 1976. Plant Propagation: Principles and Practices. Prentice & Hall of India, New Delhi.
- Hopkins, W. G. 1995. Introduction to Plant Physiology. John Wiley & Sons Inc., New York, USA.
- Jain, J. L., S. Jain and Nitin Jain. 2008. Fundamentals of Biochemistry. S. Chand & Company Ltd., New Delhi.
- Jha, T. B. and B. Ghosh. 2005. Plant Tissue Culture - Basic and Applied. Universities Press (India) Private Limited, Hyderabad.
- Janick Jules. 1979. Horticultural Science. (3rd Ed.). W. H. Freeman and Co., San Francisco, USA.
- Lewin, B. 1994. Genes V. Oxford University Press., Oxford.
- Lewin, B. 2002. Genes VII. Oxford University Press., Oxford.
- Pandey, B. P. 2007. Botany for Degree Students: Plant Physiology, Biochemistry, Biotechnology, Ecology and Utilization of Plants. S. Chand & Company Ltd., New Delhi.
- Ramawat, K. G. 2008. Plant Biotechnology. S. Chand & Company Ltd., New Delhi.
- Rao, K. M. 1991. A Text Book of Horticulture. McMillan India Ltd, New Delhi.
- Salisbury, F. B. and C. W. Ross. 1992. Plant Physiology. 4th edn. (India Edition), Wordsworth, Thompson Learning Inc., USA.
- Taiz, L. and E. Zeiger. 1998. Plant Physiology (2nd Ed.). Sinauer Associates, Inc., Publishers, Massachusetts, USA.
- Tiwari, G. N. and R. K. Goel. Green House Technology - Fundamentals, Design, Modelling and Application. Narosa Publishing House, New Delhi.
- Tunwar, N. S. and S. V. Singh. 1988. Indian Minimum Seed Certification Standards. The Central Seed Certification Board, Govt. of India, New Delhi.


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(Syllabus)
ZOOLOGY - Third year

THEORY PAPER - IV

90 hrs
(3 hrs/week)

176

APPLIED ZOOLOGY

(R. from 2010-2011)

UNIT I

1.0. Fisheries and Aquaculture

1.1. Capture fisheries - Introduction

1 hour

1.2. Finfish and shell fisheries.

2 hours

1.3. Freshwater, Brackish water and Mariculture.

5 hours

1.4. Site selection criteria.

2 hours

1.5. Aquaculture systems.

3 hours

1.6. Induced breeding.

2 hours

1.7. Larval rearing - Nursery ponds, rearing and grow out ponds

2 hours

1.8 Shrimp and prawn culture

2 hours

1.9 Hatchery systems, Seed transport, common diseases and control

2 hours

1.10 Fish biproducts

1 hour

1.11 Preservation and processing - Freezing, solar drying, Canning, salting, smoking.

2 hours

UNIT II

2.0: Clinical Science

2.1. Hematology

8 hours

2.1.1. Blood groups and transfusion problems

2.1.2. Blood diseases - Anemia, Leukemia, Leucocytosis, Leucopenia

2.1.3. Biopsy and autopsy - clinical importance

2.2. Immunology

12 hours

2.2.1. Types of Immunity - Innate and acquired

2.2.2. Antigens - Haptens and epitopes and their properties

2.2.3. Structure and biological properties of human immunoglobulin G (IgG)

2.2.4. Hypersensitivity - immediate and delayed

2.3. Important Human Parasites

10 hours

2.3.1. Blood Parasites (Structure and Clinical significance of *Plasmodium*).

2.3.2. Intestinal parasites - Structure and clinical significance *Entamoeba*, *Giardia*, *Taenia solium*, *Ancylostoma*, *Enterobius*

UNIT III

3.0. Animal Biotechnology:

3.1. Animal Biotechnology: Scope of Biotechnology, Cloning

vectors - Characteristics of vectors, Plasmids.

8 hours

3.2. Gene Cloning - Enzymatic cleavage of DNA, Restriction enzymes (Endonucleases) and Ligation.

10 hours

3.3. Application of Stem Cell technology in cell based therapy (Diabetes and Parkinson's diseases)

6 hours

PRACTICAL PAPER - IV

90 hrs
(3 hrs/week)

FISHERIES AND AQUACULTURE

1.0. Identification of important Freshwater and Marine edible fishes (Minimum 10).

2.0. Identification of important edible prawns (Minimum 5).

FIELD WORK :

Field work is compulsory. Field trip to local fisheries / aquaculture unit is to be conducted and certified field note book should be submitted at the time of practical examination.

CLINICAL SCIENCE :

1.0. Identification of the following protozoan parasites.

a). *Entamoeba histolytica*

b). *Giardia intestinalis*

c). *Balantidium coli*

d). *Trypanosoma gambiense*

e). *Plasmodium* - Any two stages

2.0. Identification of the following helminth parasites.

(P.T.O.)