

**S. V. K. P. & Dr. K. S. RAJU ARTS & SCIENCE COLLEGE(AUTONOMOUS)
PENUGONDA-534320, W. G. Dist., A.P.**

Accredited by NAAC with grade 'A'

Recognized by UGC as "College with Potential for Excellence"

(Affiliated to Adikavi Nannaya University)

Model Paper, M.Sc., Botany: Semester – I

PAPER CODE:23BOTT 11: CRYPTOGRAMS AND GYMNOSPERMS

(With Effective from 2023-2024 Admitted Batch)

Time:ThreeHours

Maximum Marks:70

SECTION – A

Answer ALL questions

10 X 5 = 50Marks

1.(a)Elaborate on the thallus diversity in Algae.

OR

(b)Criteria used in classification of Algae with special reference to Fritsch Classification.

2.(a)Discuss the general account on structure and reproduction of Chlorophyta.

OR

(b)Describe the structure, reproduction and life cycle of Ectocarpus.

3.(a)Detail the development of Antheridium, Archegonium in the order Anthocerotopsida.

OR

(b)Evolution of Sporophyte in Bryophytes.

4.(a) Describe salient features and classification of Pteridophyta.

OR

(b)Discuss the significance of Heterospory and seed habit.

5.(a) Give an account of Bennettitales.

OR

(b)Give an account on structure and reproduction of Gnetales.

SECTION – B

Answer any FIVE of the following

5x 4 =20 Marks

6 Economic importance of algae

7.Bryophytes ecological Importance

8.Funaria sporophyte

9.Economic importance of pteridophytes

10.Stele in pteridophytes

11.Geological periods

12.Fossil formation and types

13.Economic importance of Gymnosperms

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Model Paper

M.Sc Botany Semester -1

PAPER CODE 23BOTT12: MICROBIOLOGY

(With effective from the Admitted batch of 2023-24)

Time: Three Hours

Maximum Marks: 70

Section – A

Answer **ALL** Questions

5 × 10 = 50 Marks

1.(a). Give an account on Archae and Cyanobacteria.

Or

(b). Discuss the cell wall walls of Bacteria and fungi.

2(a). Write an account on Isolation and purification of viruses..

Or

(b). Give an account on nutrition in fungi.

3.(a). Give an account on Microbial growth kinetics..

Or

(b). Give an account on reproduction in bacteria.

Or

4.(a). Give an account on Reproduction in Fungi.

Or

(b). Give an account on Plant-microbe interactions

5 (a). Economic importance of Bacteria

Or

(b). Mushroom cultivation

Section – B

Answer any **FIVE**

5 × 4 = 20 Marks)

6. Phylogeny of Fungi

7. Types of nutrient media

8. Saprobic nutrition

9. Synchronous culture

10. Virioids and Prions

11. Heterothallism

12. Micorrhizae.

13. Fungi in Medicine

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Model Paper , M.Sc., Botany: Semester – I

PAPER CODE: 23BOTT13: CELL BIOLOGY OF PLANTS

(With effective from 2023-2024 Admitted Batch)

Time:ThreeHours

Maximum Marks:70

Section A

Answer All Questions

10 x 5 =50 Marks

1.(a) Write about the structure and organization of Prokaryotic and Eukaryotic Cells.

OR

(b) Describe the structure, shape and its information about Macromolecules.

2.(a) Describe the Non covalent interactions in relation to function of Nucleic acids and proteins.

OR

(b) Write an essay on Cell wall and its functions.

3.(a) Give an account of different models of Plasma membrane, which model is more appropriate and why?

OR

(b) What is cytoskeleton? Explain in detail about the role of microtubules in motility and cell division.

4.(a) Write in detail about Genome organization of mitochondria and its function.

OR

(b) Give an account on structure and function of Golgi apparatus.

5.(a) Write in detail about principles, methodology and application of ESR and NMR.

OR

(b) Explain the working principles of Light Microscopy, SEM and TEM.

Section – B

Answer any FIVE of the following

5 x 4 = 20 Marks

6. Specialized Cell types

7. Cell theory

8. Laws of Thermodynamics as applicable to biological systems

9. Structure and function of Plasmodesmata

10. Vacuole structure and function

11. Lysosomes

12. RNA editing

13. Freeze fracture

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Model Paper

M.Sc., Botany: Semester -1

PAPER:19BOTT 14: CYTOLOGY & CYTOGENETICS

(With effective from 2023-2024 Admitted Batch)

Time: 3Hrs

Max Marks: 70

Section-A

10 X 5 =50

Each question carries 10 marks.

Answer five questions, choosing ONE from each Unit

1.(a) Explain the molecular organization of centromeres and telomeres

OR

(b) Give an account of chromosome banding and its applications

2. (a) Give a brief account of Inversions, types and meiotic behavior.

OR

(b) Give a brief account of Translocations

3.(a) Give a brief account of the origin and production of autopolyploids.

OR

(b) Elaborate on Aneuploids and their significance in human genetics

4.(a) Write briefly about cell cycle and its regulation

OR

(b) Write briefly about Apoptosis

5. (a) Write briefly about Initiation of cancer at cellular level and oncogenes.

OR

(b) Write about the mechanism of apomixis and its significance

Section-B

5 X 4 =20

Answer any five of the following

6. Karyotypes

7. Polytene chromosome

8. Robertsonian translocation

9. Trisomics

10. Genome analysis in wheat

11. C-value paradox

12. Cyclins

13. Cytogenetics of sex determination

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Model Paper

M.Sc., Botany: Semester -II

PAPER CODE:23BOTT 21: GENETICS

(With effective from 2023-2024 Admitted batch)

Time:Three Hours

Maximum Marks:70

Section A

10x5=50

.Answer five questions, choosing ONE from each Unit

1.(a)What are genetic markers and elaborate on their types

OR

(b)Explain multiple allelic inheritance and its significance

2.(a) Write about tetrad analysis and its significance

OR

(b) Write an account on Recombination and its molecular mechanism

3.(a) What are Mutations and their types and their molecular basis.

OR

(b) Detail the DNA damage and the different repair mechanisms.

4.(a) Describe about Transposable elements, types, significance.

OR

(b) Write about Fine structure analysis of Gene.

5.(a) Describe the genetic basis of mitochondrial and chloroplast related characters

OR

(b) What is Male sterility and its significance.

Section-B

5 X 4 =20

Answer any five of the following

6. Chi square test

7. Three point test cross

8. Sex-linked inheritance

9. Holiday model

10. Site directed Mutagenesis

11. Multi gene families organization.

12. Transposition.

13. Benges work

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Model Paper M.Sc., Botany: Semester – II

PAPER CODE: 23BOTT22: MOLECULAR BIOLOGY OF PLANTS

(With effect from 2023-2024 Admitted Batch)

Time: Three Hours

Maximum Marks: 70

SECTION – A

5 × 10 = 50

1.(a) Describe the composition and structure of Proteins.

OR

(b) Give detailed account on composition and structure of DNA.

2.(a) Describe the mechanism of DNA Replication.

OR

(b) Explain the process and enzymes involved in DNA replication.

3.(a) Describe the mechanism of Transcription

OR

(b) Describe the mechanism of Translation.

4. (a) What is meant by Protein sorting? Discuss the process of targeting of Proteins in
Into Chloroplast and Mitochondria.

OR

(b) Write about Fine structure analysis of Gene.

5(a) Give a critical account on regulation of gene expression in Eukaryotes.

OR

(b) Write an essay on DNA Methylation.

Section – B

Answer any FIVE

(5 x 4 = 20 Marks)

6. Ramachandran plot

7. A, B and Z forms of DNA

8. MicroRNA

9. Okazaki fragments

10. Post transcriptional modifications

11. Structure of tRNA

12. Protein trafficking

13. Gene silencing

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Model Paper, M.Sc., Botany: Semester – II

PAPERCODE : 23BOTT23: PLANT DEVELOPMENTAL BIOLOGY AND EMBRYOLOGY

(With effective from the Admitted batch of 2023-24)

Time:3 Hrs

Max Marks: 70 Marks

Section–A

5 X 10 =50

Answer All questions

1.(a)Write an essay on Endoreduplication and control of plant cell size.

OR

(b)Discuss about structure,types and ontogeny of Stomata.

2.(a)Write an account on development and organization of root apex and different theories related to rootapex.

OR

(b)Write in detail about SAM and its cytological and molecularaspects.

3.(a)Explain the origin and mechanism of differentiation of epidermis and mesophyll.

OR

(b)Write an essay on development and anatomy of flower.

4.(a)Write an essay on the ultra structure of Tapetum and itsfunctions.

OR

(b)Describe about development and Organization of the mature Embryosac.

5.(a)Write in detail about double fertilization and triplefusion.

OR

(b)Discuss about Polyembryony and mention its practicalapplications.

Section–B

5 X 4 = 20

Answer any five of thefollowing

6.Trichomes.

7.Root hairs

8.Phyllotaxy

9.Structure of Anther.

10.Pollen storage.

11.Embyosac haustoria

12.Monocot embryo

13.Apomixis

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Model Paper, M.Sc Botany Semester II

PAPER CODE23BOTT 24: MOLECULAR PLANT PATHOLOGY

(With effective from the Admitted batch of 2023-24)

Time:ThreeHours

Maximum Marks:70

Section – A

Answer **ALL** Questions

10 × 5 = 50Marks

1.(a). Give an account on causal agents of plantdiseases

OR

(b). Discuss the process of colonization of pathogen in host

2 .(a) Describe Host-Pathogen interactions

OR

(b) Disuss the physiological changes in plants.

3.(a).Discuss symptoms,etiology,epidemiology and control measures of Clubroot of Crucifers.

Or

(b). Write an essay on Bean rust and Coffee rust.

4.(a).Discuss about any two Bacterial diseases and its control measures.

Or

(b).Describe the symptoms,etiology,epidemiology and control measures of Little leaf of Brinjal

5.(a). Give an account on transgenic and genetic manipulation approaches in plant disease management.

Or

(b). Discuss plant disease management

Section B

Answer any Five

5x4=20

6.Koch postulates

7.Elicitors

8.Host specific toxins

9.Damping of seedlings

10.Whip smut of Sugarcane.

11.Rice tungro

12.I.P.M

13.Role of bioinformatics in pathology