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PENUGONDA-534320, W. G. Dist., A.P.

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Model Paper

M.Sc., Botany: Semester – I

PAPER CODE: 19BOTT11: CRYPTOGAMS AND GYMNOSPERMS

2019-2020

(With Effective from 2019-2020 Admitted Batch)

Time: Three Hours **Maximum Marks: 75**

SECTION – A

(15X4 = 60 Marks)

Answer ALL questions

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

OR

(b) Evolution of Sporophyte in Bryophytes.

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

OR

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

4. (a) Give an account of Bennettitales.

OR

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

SECTION – B

Answer any THREE (3x5 =15 Marks)

5. Economic importance of algae
6. Protonema
7. Thallus types in Marchantiales
8. Stele in Pteridophytes
9. Geological periods
10. Cordaites

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Model Paper

M.Sc Botany Semester I

PAPER CODE:19BOTT12:MICROBIOLOGY-2019-2020

(With effective from the Admitted batch of 2019-20)

Time: Three Hours **Maximum Marks: 75**

Section – A

Answer **ALL** Questions (15 × 4 = 60 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 microbial growth kinetics.

OR

(b). Give an account on nutritional requirements of microbes with emphasis on nutrition in fungi.

3. (a). Give an account on reproduction in bacteria.

OR

(b). Reproduction in fungi.

4. (a). Give an account on Plant-microbe interactions.

OR

(b). Economic importance of microorganisms.

Section – B

Answer any **THREE** (3× 5 = 15 Marks)

5. Phylogeny of Fungi
6. Types of nutrient media
7. Synchronous culture
8. Recombination
9. Biosensors
10. Fermentor

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Model Paper

M.Sc., Botany: Semester – I

PAPER CODE:19BOTT 13: CELL BIOLOGY OF PLANTS

2019-2020

(With effective from 2019-2020 Admitted Batch)

Time: Three Hours **Maximum Marks: 75**

Section A

Answer all Questions

(15 x 4 = 60)

1. (a) Descrie the Non covalent interactions in relation to function of Nucleic acids and Proteins

OR

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

2. (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.

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

OR

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

4. (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 THREE (3 x 5 = 15 Marks)

5. Specialized Cell types
6. Structure and function of Plasmodesmata
7. Vacuole structure and function
8. Lysosomes
9. RNA editing
10. Freeze fracture Technique

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Model Paper

M.Sc., Botany: Semester – I

PAPER CODE:19B0TT14:CYTOLOGY&CYTOGENETICS

2019-2020

Time: 3 Hrs **(With effective from the Admitted batch of 2019-20)**

Max Marks: 75

Section – A **15 X 4 = 60**

.Answer four 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 chromosomal structural aberrations and explain their meiotic behavior

OR

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

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

OR

(b)Give an account on molecular organization of nuclear genome

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

OR

(b)Write about the mechanism of apoptosis giving its significance

Section –B 3 X 5 = 15

Answer any THREE

5. Karyotype
6. Polytene chromosome
7. Robertsonian translocation
8. Trisomics
9. C value paradox
10. Cyclins and cdks

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Model Paper

M.Sc., Botany: Semester – II

PAPER CODE:19BOTT 21:

GENETICS-2019-2020

(With effective from 2019-2020 Admitted batch)

Time: Three Hours **Maximum Marks: 75**

Section A **15x4=60Marks**

Each question carries 15 marks.

Answer four 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)Detail the DNA damage and the different repair mechanisms

OR

(b)Describe the organization and importance of Multigene families

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

OR

(b)What are the different methods of gene mapping in bacteriophages

Section –B 5 X 3 = 15

Answer any THREE

5 .Chi-square test

6. Three-point test cross

7 .Holiday model

8. Site directed mutagenesis

9 .Transposans

10.Male sterility

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Model Paper

M.Sc., Botany: Semester – II

PAPER CODE: 19BOTT22: MOLECULAR BIOLOGY OF PLANTS

2019-2020

(With effective from 2019-2020 Admitted Batch)

Time: Three Hours **Maximum Marks: 75**

SECTION – A

Answer ALL questions. **(15 x 4 = 60 Marks)**

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 Transcription and post transcription activities.

3. (a) Describe the mechanism of Translation.

OR

(b) What is meant by Protein sorting? Discuss the process of targeting of proteins into chloroplasts.

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

OR

(b) Write an essay on regulation of gene expression with special reference to Lac & Tryp operons.

Section – B

Answer any Three (3 x 5 = 15 Marks)

5. Ramachandran plot
6. Okazaki fragments
7. Replication of ends of Chromosomes
8. Structure of tRNA

9.Gene silencing

10.Lytic and Lysogenic cycle

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Model Paper

M.Sc., Botany: Semester – II

PAPER CODE :19BOTT23: PLANT DEVELOPMENTAL BIOLOGY AND EMBRYOLOGY-2019-2020

(With effective from the Admitted batch of 2019-20)

Time: 3 Hrs Max Marks: 75 Marks

Section – A

15 X 4 = 60

Each question carried 15 marks.

Answer four questions, choosing ONE from each Unit.

1. (a)Give a concise account on plant Architecture.

OR

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

2. (a)Write in detail about SAM and its cytological and molecular aspects.

OR

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

3. (a)Write an essay on the ultra structure of Tapetum and its functions.

OR

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

4. (a)Write in detail about double fertilization and triple fusion.

OR

(b)Discuss about Polyembryony and mention its practical applications.

Section –B 3X 5 = 15

Each Answer any THREE

5. Plant cell division
6. Bulliform cells
7. Anatomy of Flower
8. Microsporogenesis
9. Epistase
10. Monocot embryo

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Model Paper

M.Sc Botany Semester II

PAPER CODE:19B0TT 24: MOLECULAR PLANT PATHOLOGY

2019-2020

(With effective from the Admitted batch of 2019-20

Time: Three Hours

Maximum Marks: 75

Section – A

Answer **ALL** Questions (15 × 4 = 60 Marks)

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). Discuss the physiological changes in plants

3. (a). Give an account on viral diseases of plants

OR

(b). Discuss symptoms, etiology, epidemiology and control measures of any one of the fungal diseases that you have studied.

OR

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

OR

(b). Discuss plant disease management

Section – B

Answer any **THREE**

(3 × 5 = 15)

5. Koch Postulates

6. Phytoalexins

7. Disease signaling in plants

8. Citrus canker

9. Club root of Crucifers

10. IPM