LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

NOVEMBER 2020 SEMESTER EXAMINATIONS

III SEMESTER – M.Sc., PLANT BIOLOGY AND PLANT BIO - TECHNOLOGY

Paper Code : **17PIE3D** Title of the Paper : **Biophysics, Bioinformatics And Nanotechnology**

DATE **: 31.12.2020 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. Entropy
2. Buffer
3. Primary databases
4. NCBI
5. PubMed
6. BLAST
7. Protein microarray
8. Nano shells
9. Fullerenes
10. Quantum dots
11. Nanosensors
12. Nano medicine.

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Write a short note on bioluminescence.
14. Discuss on DNA sequence database.
15. Differentiate local and global sequence alignment.
16. Give an account of microarrays.
17. What are nanomaterials and nanoparticles.
18. Write an account on nanorobots in medical applications.
19. Write about the use of nanoparticles in drug delivery.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Describe the molecular structure of ATP.
21. Discuss the protein sequence and structure databases.
22. Write an essay on Human genome project.
23. Write an account on nanofibres, nanotubes, and nanowires, and their applications.
24. Discuss the various applications of green nanobiotechnology.

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NOVEMBER 2020 SEMESTER EXAMINATIONS

III SEMESTER – M.Sc., PLANT BIOLOGY AND PLANT BIO - TECHNOLOGY

Paper Code : **17PIE3E** Title of the Paper : **Plant Microtechnique**

DATE **: 04.01.2021 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. Phase Contrast Microscope
2. Dark Field Microscope
3. Microphotography
4. Camera Lucida
5. Killing
6. Destaining
7. Maceration
8. Smear
9. Microtome
10. Dehydration
11. Clearing
12. Mounting.

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Explain the principle and components of light microscope.
14. Bring out the principles and working mechanism of microphotography.
15. Give an account on fixation.
16. How to prepare a Squash technique.
17. Describe the Rotary Microtome.
18. Write about the principles of Polarizing Microscope.
19. Explain the whole mount technique.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Describe in detail the principles, components of Transmission electron microscope.
21. Write an essay on micrometry.
22. Write in detail about the types of stains and staining procedures.
23. What are the different types of microscope preparations?
24. What are the different types of microtomes and add a note on its uses?

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NOVEMBER 2020 SEMESTER EXAMINATIONS

III SEMESTER – M.Sc., PLANT BIOLOGY AND PLANT BIO - TECHNOLOGY

Paper Code : **17PIM3F** Title of the Paper : **Plant Anatomy And Embryology of Angiosperms**

DATE **: 23.12.2020 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. Epiblema
2. Accessory cambium
3. Dendrochronology
4. Sap wood
5. Fixation
6. Fast green
7. Tapetum
8. Pollinium
9. Embryo sac
10. Apomixis
11. Rotary microtome
12. Triple fusion.

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Briefly discuss the secondary structure of dicot root.
14. Write short note on annual rings.
15. Give an account on maceration technique.
16. Describe briefly the development of male gametophyte in angiosperms.
17. Give a brief account on types of endosperms.
18. Give an account on anomalous secondary growth in *Boerhaavia.*
19. Explain the types of Ovules.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Describe the types, characteristic features and functions of any one complex tissue studied by you.
21. Explain the structure and functions of vascular cambium.
22. Write an essay on the steps involved in the preparation of permanent slide.
23. Describe microsporogenesis.
24. Explain monosporic, bisporic and tetrasporic embryo sac with suitable examples.

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NOVEMBER 2020 SEMESTER EXAMINATIONS
III SEMESTER – M.Sc., PLANT BIOLOGY AND PLANT BIO - TECHNOLOGY

Paper Code : **17PIM3G** Title of the Paper : **Plant Physiology and Biochemistry**

DATE **: 26.12.2020 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. Water potential
2. Antitranspirant
3. Bolting
4. Short day plants
5. Secondary metabolites
6. Phytoalexins
7. Chilling injury
8. Disaccharides
9. Active site
10. Photophosphorylation
11. RUBISCO
12. Nitrate reductase.

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Write an account on loading and unloading of photoassimilates in phloem.
14. Explain the shikimic acid pathway.
15. What is phytochrome? Mention different forms of phytochrome and its interconversion.
16. What is abiotic stress? Write on different types of abiotic stress in plants.
17. Describe the structure of lipid with a suitable diagram.
18. Give an account of different types of enzyme cofactors.
19. Explain GDH and GS - GOGAT pathways of amino acid biosynthesis.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Describe the theories explaining stomatal movement.
21. Discuss the biosynthesis and physiological effects of cytokinins.
22. Write an essay on the responses of plants to biotic stress.
23. Explain the secondary, tertiary and quaternary structure of proteins.
24. Describe CAM pathway.

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NOVEMBER 2020 SEMESTER EXAMINATIONS
III SEMESTER – M.Sc., PLANT BIOLOGY AND PLANT BIO - TECHNOLOGY

Paper Code : **17PIM3H** Title of the Paper : **Cell Biology And Molecular Biology**

DATE **: 29.12.2020 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. Peroxiosomes
2. Middle lamella
3. Nucleosome
4. S - Phase
5. Z - DNA
6. Nucleoside
7. mRNA
8. Termination codon
9. Capping
10. Promoter gene
11. Thylakoids
12. Topoisomerase.

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Explain the ultrastructure of Mitochondrion.
14. Differentiate between Euchromatin and Heterochromatin.
15. Write short notes on cot curve.
16. Give an account on DNA repair mechanism.
17. Write short notes on post translational modifications of proteins.
18. Explain the ultrastructure of Nucleus.
19. Mention the characteristic features of Genetic code.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. With a suitable diagram explain the fluid mosaic model of Plasma membrane.
21. Explain the stages involved in the Meiotic cell division.
22. Describe the steps involved in the isolation of nucleic acids.
23. Describe the DNA replication in Prokaryotes.
24. Give a detailed account on *trp* operon.

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