D–4554

Sub. Code
34611

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

First Semester

PLANT DIVERSITY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is double fertilization?
2. What is Coenocyte?
3. What are fronds?
4. Gametangium.
5. Explain air blader.
6. Difference between holocarpic and eucarpic.
7. List out the general features of Gnetopsida.
8. What are Sphagnales?
9. Define protonema.
10. Importance of Lichen.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain the thallus organization in algae.

Or

(b) Explain the development of archegonium in Funaria.

12. (a) Detailed note on the structure of Lichens.

Or

(b) Life cycle of Selaginella.

13. (a) Describe the sporophyte of Calobryales.

Or

(b) Write notes on structure of the sprophyte of Marchantia.

14. (a) General characteristics of Lycopsida.

Or

(b) Explain the structure of Angiopteris with illustration.

15. (a) Explain structure of gametophyte of Sphagnum.

Or

(b) Write notes on fossil – Lepidodendron.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Write an essay on comparative study of *Chlorophyceae* and *Rhodophyceae*.

17. Give an account of spore dispersal mechanism in fungi.

18. write notes on gametophyte and sporophyteof *Jungermaniales* and *Sphaerocarpales*.

19. Describe classification (K.R. Sporne) of Gymnisperms.

20. Explain elaborately about fossils of Gymnosperms.

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D–4555	Sub. Code
	34612

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

First Semester

PLANT TAXONOMY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is systematic Botany?

2. Origin of Dicotyledones.

3. Define artificial system.

4. Explain about Ecotype.

5. Author citation.

6. What is chemotaxonomy?

7. Explain about vegetative feature of Dioscoreaceae.

8. Mention the economic importance of Sapotaceae.

9. Define inflorescence of Convolulaceae.

10. Explain about Fruit of family Sapindaceae.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write short notes on Biotype and Ecad.

Or

(b) Write critical notes on main concepts in Engler and Prantls system of classification.

12. (a) Briefly explain about Takhtajan and Hutchinson systems of classification of angiosperm.

Or

(b) Critical notes on the following : Rules of Nomenclature.

13. (a) Write short notes on type method and publication of names.

Or

(b) Briefly explain about conservation names of species and draft biocode.

14. (a) Give floral formula and floral diagram of with following gamopetalae families Rubiaceae and Verbenaceae.

Or

(b) Give an account on vegetative character of polypetalae families Papaveraceae and Mytaceae.

15. (a) Compare the flower and inflorescence character of Aristolochiaceae and Loranthaceae.

Or

(b) Write short notes on floral features of following pair families Mimosaceae and Menispermaceae.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Describe the theories of biological classification : Molecular systematics.

17. Give the Outline of Bentham and Hooker classification and add note on its merits and demerits.

18. Write an short essay on modern inter disciplinary approaches to taxonomy.

19. Enumerate the vegetative characters and floral feature of monocotyledons families Hydrocharidaceae and Dioscoreacae.

20. Give an account on floral features of polypetalae families Geramiaceae and Meliaceae and add notes on economic importance.

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D–4556

Sub. Code
34613

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

First Semester

BIOLOGICAL TECHNIQUES IN BOTANY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Depth of Focus.

2. Aperture

3. List out adhesives used to fix sections in slide.

4. List out common clearing agents used in microtomy.

5. Auxochrome

6. Metachromasia

7. Isoelectric focusing

8. AFLP

9. RAPD

10. Mordants.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write notes on haemocytometer and its applications.

Or

(b) Write notes on polarizing microscopy.

12. (a) Write note on various mountants and mounting techniques in microtomy.

Or

(b) Write notes on killing and fixing methods employed in microtomy.

13. (a) Discuss about various methods of placing of plant sample in microslides.

Or

(b) Write notes on free-hand sectioning techniques, its advantages and disadvantages.

14. (a) Write notes on SDS-PAGE technique.

Or

(b) Write notes on Agarose gel electrophoresis.

15. (a) Write notes on applications of radioactive isotopes.

Or

(b) Write notes on Western blotting technique and hybridization.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate principle, parts, working mechanism and applications of Confocal and Phase Contrast Microscopy.

17. Write an essay on various types of microtomes and their uses.

18. Write an essay on histochemical examination of immobilization of proteins, carbohydrates, lipid and enzymes in plant tissues.

19. Write a detailed account on DNA finger printing technology.

20. Write an essay on 20 electrophoresis.

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D–4557

Sub. Code
34622

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

Second Semester

PLANT ANATOMY AND EMBRYOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define apical cell theory

2. List out the functions of plasmodesmata

3. Write notes on vessels.

4. What is vascular cambium?

5. Write notes on intercalary meristem.

6. Give significance of the root-stem transition?

7. Write short note on floral organs

8. What is sapwood and Heartwood?

9. Define microsporogenesis.

10. What is polyembryony?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write short notes on the theories of root apical meristem.

Or

(b) Give an illustrated account on the structure diversity of xylem with diagram.

12. (a) Explain the about nodal anatomy in detail.

Or

(b) How is auxin essential for lateral growth? Explain giving examples.

13. (a) Explain about the anomalous secondary growth in angiosperm.

Or

(b) Write a note on floral vasculature.

14. (a) Discuss about the uses of wood.

Or

(b) Write short notes on the commercial woods of south India.

15. (a) Explain about the pollen stigma compatibility.

Or

(b) Discuss about the female gametophytes with diagram.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in details about the classification of meristem tissues.

17. Briefly discuss about the concepts regrading stem-root transition with suitable diagram.

18. Explain in details about the physical and mechanical properties of wood.

19. Give an illustrated account on Anther development.

20. Write a detailed account an apomixis and its types.

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D–4558

Sub. Code
34631

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

Third Semester

MICROBIOLOGY AND PLANT PATHOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Prions.

2. Viroids.

3. Generation time.

4. Lyophilization.

5. Koch's postulates.

6. Antibiotics

7. Control measures of rust of wheat.

8. Anthracnose

9. Idioblasts.

10. Disease triangle

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write notes on classification of viruses.

Or

(b) Illustrate replication and transmission of viruses.

12. (a) Write notes on growth curve of bacteria.

Or

(b) Write notes on Archea.

13. (a) Write notes on epidemic plant diseases and strategies to control them.

Or

(b) Write notes on plant disease control measures.

14. (a) Write notes on Mosaic disease of Tobacco.

Or

(b) Write notes on bunchy top disease of Banana.

15. (a) Write notes on microbial antibiotic production.

Or

(b) Illustrate ultrastructure of bacteria.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Write an essay on isolation and purification of viruses.

17. Illustrate various reproduction modes found in bacteria.

18. Write an essay on types of plant diseases and methods of studying plant diseases.

19. Write an essay on scope of microbiology and its evolution into science.

20. Write an essay on host-pathogen interactions in plant pathology.

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D–4559

Sub. Code
34632

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

Third Semester

ECOLOGY, BIODIVERSITY CONSERVATION AND ECONOMIC BOTANY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define niche.

2. Mutualism.

3. Predation.

4. Biosphere reserves.

5. Threatened.

6. WTO.

7. Patents.

8. Give any two uses of Ginger.

9. Soya bean.

10. List out any two uses of Mahogany.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain the ecological succession.

Or

(b) Highlights the significance of species interaction.

12. (a) Describe the Red Data Book and its significance.

Or

(b) List out the Biodiversity Acts of India of 2002 and 2004.

13. (a) Justify your summary of plant breeder's rights.

Or

(b) Evaluate the case studies on Neem and Turmeric.

14. (a) Write a detailed note on the cultivation practices and uses of clove.

Or

(b) Give a detailed account on the extraction and uses of Sun flower.

15. (a) Write a detailed note on the timber value of Teak wood.

Or

(b) List out the cultivation process and uses of Aconitum.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Evaluate the concepts of population biology and self-regulating mechanisms.

17. What methods have we adopted to conserve Indian biodiversity?

18. Describe the different types of intellectual property rights and their significance.

19. Elucidate the extraction process and economic importance of coconut and gingelly.

20. Enumerate the economic benefits of Cotton and Jute.

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D–4560

Sub. Code
34633

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

Third Semester

ALGAL TECHNOLOGY AND MUSHROOM TECHNOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Spirulina

2. Agar-agar

3. Azolla

4. Seaweeds

5. nif genes

6. Sterilization

7. Poisonous mushroom

8. Incubation

9. *Agaricus bisporus*

10. Export value

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Highlight the mass cultivation techniques of micro algae.

Or

(b) Give an account on Single cell protein.

12. (a) Discuss the micro algae is used as biofertilizers.

Or

(b) Explain the applications of seaweeds in Biotechnology.

13. (a) List out the medicinal uses of mushroom.

Or

(b) Write about the preservation techniques for mushroom.

14. (a) How to cultivate the Oyster mushroom.

Or

(b) Narrate the low cost mushroom farm design of production.

15. (a) Explain factors affecting mushroom cultivation.

Or

(b) Discuss the nutritional value of mushroom.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. List out the Economic importance of Algae.

17. Summarize the mass cultivation techniques of macro algae.

18. Write an essay on the Pure culture technique.

19. Elaborate notes on the Spawn preparation.

20. Explain the Paddy straw mushroom cultivation.

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D–4561

Sub. Code
34642

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

Fourth Semester

BIOSTATISTICS, BIOPHYSICS AND BIOINFORMATICS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is data in statistics and its types?

2. Define pie chart.

3. Define standard deviation.

4. What is t test?

5. Define laws of thermodynamics.

6. What do you mean by redox potential?

7. What is bioinformatics?

8. What is protein sequence data base?

9. What is the full form of FASTA?

10. Define phylogenetic tree.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write short note on the data collection and interpretation.

Or

(b) Explain in detail about the measures of dispersion.

12. (a) Write short note on null hypothesis and alternate hypothesis.

Or

(b) Write the steps for the analysis of Chi square test.

13. (a) Explain in detail account on energy transductions in biological systems.

Or

(b) Discuss about the characteristics of solar radiation.

14. (a) Discuss about any five applications of bio informatics.

Or

(b) Discuss about the primary protein data base.

15. (a) Write short notes on Entrez.

Or

(b) Explain in detail about the phylogenetic tree and its types.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Briefly discuss about the various methods of graphical representation of data.

17. Explain in detail about the measures of central tendency.

18. Explain why ATP is a high energy compound.

19. Explain in detail about the phylogenetic analysis.

20. Briefly discuss about the BLAST algorithm and the various BLAST program.

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D–4562

Sub. Code
34643

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2024.

Fourth Semester

HORTICULTURE AND PLANT TISSUE CULTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Agronomy
2. Vermiculite
3. Budding
4. Corms
5. Bonsai
6. Terrace garden
7. Totipotency
8. Callus
9. Micropropagation
10. Artificial seed

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Discuss the different types of Soil.

Or

(b) Write about the scope of Horticulture.

12. (a) Explain the viability and germination of Seeds.

Or

(b) Highlight the importance of Growth regulators.

13. (a) Write short notes on Outdoor gardening.

Or

(b) How to cultivate the Water plants.

14. (a) Explain the Sterilization techniques.

Or

(b) Write about the establishment and maintenance of Callus in Tissue culture.

15. (a) Highlight the methods involved in artificial seed production.

Or

(b) Comment on the Somoclonal variations.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Write about the water irrigation system.

17. Give an detailed account on Vegetative propagation.

18. Write short notes on

(a) Hanging basket

(b) Bonsai plant

(c) Pruning

(d) Foliage plants.

19. Illustrate various steps of micropropagation and its applications.

20. Discuss — Protoplast culture and fusion techniques.

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