D–2283

Sub. Code
34611

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023.

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. Blue Green Algae (BGA)

2. Define Heterocyst

3. Mentions about Hepaticopsida

4. Basidiomycota

5. Define Gymnomycota

6. Heteromerous thallus in Lichens

7. Define Strobilus

8. Crazier in Pteridophyte

9. Explain about Coralloid roots

10. Fossil Gymnosperm medullosa.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on definition and concepts of Algal diversity.

Or

(b) Give an account on reproduction of algae Phaeophyceae.

12. (a) Write short notes on reproductive pattern in Fungi.

Or

(b) Briefly explain about classification of fungi by Alexopoulos.

13. (a) Write short notes on general account of Lichens.

Or

(b) Give an account reproduction of fungi Phycomycetes.

14. (a) Give a brief account of Characteristic features of Calobryales.

Or

(b) Write short notes on general feature of Pteropsida.

15. (a) Write briefly explain about general characters of Cycadales.

Or

(b) Briefly explain about fossil gymnosperm Cytonia.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write an essay on general features and reproduction of Rhodophyceae.

17. Give a comparative account of the structure of fungi Phycomycetes and Duetromycetes.

18. Briefly explain about gametophytes and sporophytes of Bryophytes Marchantiales.

19. Describe the General characteristic and life cycle patterns in Psilopsida.

20. Give a comparative account of the structure gametophytes of Gnetales and Gionkgoales.

———————

D–2284	Sub. Code
	34612

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023.

First Semester

PLANT TAXONOMY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define systematic Botany

2. Origin of Monocotyledons

3. Write about artificial system

4. Explain about Ecotype

5. Author citation

6. Chemo taxonomy

7. Explain about vegetative feature of Hydrocharidaceae.

8. Mention the economic importance of Rubiaceae.

9. Define inflorescence of Verbenaceae

10. Explain about Fruit of family Meliaceae.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Give detail account on binomial system of nomenclature.

Or

(b) Write critical notes on phylogenetic system of classification in your syllabi.

12. (a) Briefly explain about Bentham and Hooker systems of classification of angiosperm.

Or

(b) Briefly explain about on Biosystematics.

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

Or

(b) Briefly explain about Principles of priority and limitations.

14. (a) Give floral formula and floral diagram of gamopetalae family Asteraceae.

Or

(b) Give an account on vegetative character of polypetalae family Magnoliaceae.

15. (a) Compare the flower and inflorescence characters of Polygonaceae and Amranthaceae.

Or

(b) Write short notes on floral features of family Myrtaceae.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write an essay on Scope and Application of Plant Taxonomy.

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

18. Describe the structural, biological and Molecular systematics.

19. Enumerate the vegetative characters and floral feature of monocotyledons families Arecaceae and Cyperaceae.

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

———————

D–2285	Sub. Code
	34613

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023

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 the questions.

1. Abbe Theory.
2. Photomicrography.
3. Stropping.
4. Mounting.
5. KI.
6. Squashes.
7. Eosin Y.
8. AFLP.
9. Isoelectric focusing.
10. FPLC.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write notes on light microscopy.

Or

(b) Write notes on Polarizing microscopy.

12. (a) Write notes on camera lucida.

Or

(b) Write notes on DNA fingerprinting.

13. (a) Write notes on various types of microtomes.

Or

(b) Write notes on killing and fixing of samples for microtome technique.

14. (a) Write notes on localization of proteins in plant tissue samples.

Or

(b) Write notes on localization of carbohydrates in plant tissue samples.

15. (a) Write notes on Southern and Northern blotting techniques.

Or

(b) Write notes on RAPD technique.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate parts, function and applications of Scanning Electron Microscope.

17. Write an essay on various steps of microtome sectioning technique.

18. Write an essay on preparation of microslides.

19. Write an essay on autoradiography and liquid scintillation spectrometry.

20. Illustrate native and SDS-PAGE techniques and their applications in biological sciences.

———————

D–2287	Sub. Code
	34622

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023

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 the questions.

1. Middle lamella.
2. Plasmodesmata.
3. Phellogen.
4. Exarch xylem.
5. Open vascular bundle.
6. Soft wood.
7. Dendrochronology.
8. Sal wood.
9. Exine.
10. Filiform apparatus.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the Apical cell theory.

Or

(b) Write short notes on :

(i) Primary cell wall

(ii) Secondary cell wall.

12. (a) Discuss about the Transfer cells.

Or

(b) Write about the Storied and Non-storied cambium.

13. (a) Explain the abnormal behavior of cambium in Dicot plants.

Or

(b) Describe the Root-stem transition in plants.

14. (a) Enumerate the physical properties of wood.

Or

(b) Compare the Compression, Reaction and Tension wood.

15. (a) What is endosperm? Explain its types.

Or

(b) Summarize the Megasporogeneis.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Describe the phylogeny of phloem.

17. Explain the ultra structure of plant cell wall.

18. Discuss — cambial variations.

19. List out the commercial woods of South India.

20. Given an account on about the female gametophyte.

———————

D–2289	Sub. Code
	34631

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023.

Third Semester

MICROBIOLOGY AND PLANT PATHOLOGY

(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 meant by Gram positive and Gram negative bacteria?

2. What is CFU?

3. Give general characters of Protozoa.

4. What is a prion?

5. Write is antibiotic resistance?

6. Define inoculum and incubation.

7. Define disease cycle.

8. Define biological control with examples.

9. What is Downey mildew of grapes?

10. Give the name of causal organism of leaf spot diseases of groundnut.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) What are the four phases of bacterial growth?

Or

(b) Comment on replication of Virus.

12. (a) Give general characteristics features of virus.

Or

(b) Explain in detail reproduction of bacteria.

13. (a) Describe about phytoplasma.

Or

(b) Write essay on symptoms of plant disease.

14. (a) Comments on Integrated Plant Disease Management.

Or

(b) Briefly explain the plant disease forecasting.

15. (a) Write essay on host-pathogen interactions.

Or

(b) Briefly explain the Rust of Wheat.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Enumerate disease caused by bacteria and viruses to human.

17. Discuss in detail about the reproduction of bacteria.

18. Briefly explain the defense mechanism in plants.

19. Discuss in detail about the cultural practices method to control plant diseases.

20. Write essay on late blight of potato with reference to causal organism, symptoms, and disease cycle and control measures.

———————

D–2290	Sub. Code
	34632

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023.

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 ecosystems.
2. State about edge effect.
3. Biodiversity.
4. Endemism.
5. Mutualism.
6. Comment on IPR.
7. Copyright.
8. Coriandrum.
9. List out any two uses of Peanut.
10. Sathavari.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the concept of food chain and food web.

Or

(b) Discuss the Gause's principle and survivorship curves.

12. (a) List out the types of biodiversity.

Or

(b) Summarize biotechnology-assisted conservation (*In-situ* and *Ex-situ*).

13. (a) Enumerate the role of the establishment and functions of the World Trade Organization (WTO).

Or

(b) Give an elaborate account of general guidelines for research in transgenic plants.

14. (a) Justify the Cardamom as a source of economic wealth.

Or

(b) Write a short note on timber value of rose wood.

15. (a) Describe in detail the ways that palm oil is extracted and how it is used.

Or

(b) Explain the medicinal importance of Saraca.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Examine the interactions between the species using relevant examples.

17. Discuss the vegetative types and phytogeographic zones found in India and Tamil Nadu.

18. Critically evaluate the Flavr Savr™ tomato as a GM food.

19. Elucidate the economic importance of turmeric and pepper.

20. Describe the ethanobotany, cultivation, processing and uses of *Rauvolfia* and *Azadiracta*.

———————

D–2291

Sub. Code
34633

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023.

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 the questions.

1. Mass cultivation
2. Single cell protein
3. Biofertilizer
4. Seaweeds
5. Spawn
6. Sterilization
7. Pure culture
8. Incubation
9. Crude fiber
10. Drying

PART B — (5 × 5 = 25 marks)

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

11. (a) Highlight the importance of algal cultivation.

Or

(b) Give an account on Biofuels and other bioproducts from algae.

12. (a) Discuss the role of seaweeds in Agriculture and Horticulture.

Or

(b) Explain the protoplast fusion techniques in macro algae.

13. (a) How to control mushroom diseases?

Or

(b) Narrate the post harvesting techniques.

14. (a) List out the Edible mushrooms in India.

Or

(b) Comment on the scope of mushroom cultivation.

15. (a) Explain the Export value of mushroom.

Or

(b) Write about the mushroom storage in salt solution.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Describe the Economic importance of Algae.

17. Summarize the applications of seaweeds in Biotechnology.

18. Write an essay on the Pure culture technique

19. Elaborate notes on the Spawn preparation.

20. Explain the Packing and preservation technique for mushroom.

———————

D–2293	Sub. Code
	34642

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION,
DECEMBER 2023.

Fourth Semester

BIOSTATISTICS, BIOPHYSICS AND BIOINFORMATICS

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. Discuss about the types of data.
2. Write the formula to draw a pie diagram.
3. Define second law of thermodynamic.
4. Define redox potential.
5. Define biological database.
6. Define a Dendrogram.
7. Write the formula to calculate coefficient of variance.
8. What is the meaning of 5% level of significance?
9. What is the wavelength of IR radiation and mention its application in biological studies.
10. What is absorption spectra?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss about the diagrammatic representation of Data.

Or

(b) The length of fish of two different species A and B were measured. Measurements were taken correct to the nearest cm and data were given in table. Calculate the mean of fish of Species A and B from the data given in table.

Name of the species	Length of the fish (in cm)				
Specie A	12.5	16.8	21.5	24.3	26.5
Specie B	35.6	41.7	49.8	59.6	62.5
Specie A	32.8	46.0	42.8	40.3	
Specie B	67.8	72.1	78.2	79.0	

12. (a) Explain in detail about the measures of dispersion.

Or

(b) Write the steps for the test of significance by 't' test.

13. (a) Discuss about ATP/ADP cycle.

Or

(b) Explain in details about the electromagnetic spectrum highlighting its wavelength sources and application.

14. (a) Write short notes on the multidisciplinary role of bio informatics.

Or

(b) Discuss about nucleic acid data base.

15. (a) Explain in details about Sequence Retrieval System.

Or

(b) Discuss about the BLAST algorithm.

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

Answer any TIIREE questions.

16. The length of plant leaves of two different species A and B were measured. Measurements were taken correct to the nearest cm and data were given in table. Calculate the standard deviation and standard error of leaves of Species A and B from the data given in table.

Name of the species	Length of the fish (in cm)								
Specie A	25	20	24	24	26	30	27	28	40
Specie B	16	12	10	12	15	18	19	20	22

17. Explain in detail about the various methods of sampling techniques.

18. Explain in detail about the standard free energy change of a chemical reaction.

19. Explain in detail about the protein data base.

20. Briefly discuss about the multiple sequence alignment.

———————

D–2294	Sub. Code
	34643

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2023.

Fourth Semester

HORTICULTURE AND PLANT TISSUE CULTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Macronutrients

2. Perlite

3. Tubers

4. Gardening

5. Arches

6. Pruning

7. Totipotency

8. Explant

9. Artificial seeds

10. Organogenesis

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write about the scope of Horticulture.

Or

(b) Write short notes on: Sprinkler system.

12. (a) Discuss: Seed dormancy.

Or

(b) Explain the Germplasm collection.

13. (a) Illustrate the Bonsai.

Or

(b) Describe the Terrace garden.

14. (a) Explain the Sterilization techniques.

Or

(b) Write about the Nutrient media composition in Tissue culture.

15. (a) Comment on the role of hormones in Regeneration.

Or

(b) Give an account on Somoclonal variations.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the importance of Micro and Macronutrients of soil.

17. Write short notes on: (a) Cuttings (b) Layering (c) Grafting.

18. Give an detailed account on Indoor gardening with neat labeled diagram.

19. Briefly explain the Commercial importance and Applications of Micropropagation.

20. Discuss – Protoplast culture.

———————