D–6932

Sub. Code
34611

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

First Semester

Botany

PLANT DIVERSITY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Enlist the causes of eutrophication.

2. Enlist the uses of air blader.

3. Write a short note on Puffball.

4. Outline the organization of Gametangium.

5. Highlight the significance of rhizoids.

6. Mention the significance of Elaters.

7. Enlist the importance of Eusporangiate.

8. Write a short note on Resin canals.

9. Write about the features of Living fossil.

10. List out the fossil research institutes in India.

PART B — (5 × 5 = 25 marks)

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

11. (a) Define and explain the concept of plant diversity.

Or

(b) Describe the features of chlorophyceae.

12. (a) Explain the reproductive cycle of phaeophyceae.

Or

(b) Describe the external feature of phycomycetes.

13. (a) Explain the structure of *Deuteromycetes*.

Or

(b) Describe the morphology of Medulosa.

14. (a) Discuss about the classification of bryophytes.

Or

(b) Describe the structural variations in gametophytes of Sphaerocarpales.

15. (a) Write the characteristic features of Pteropsida.

Or

(b) Explain the special features of Gynkgoales.

PART C — (3 × 10 = 30 marks)

Answer any THREE of the following.

16. Write a detailed account on reproduction and life cycle of Phaeophyceae.

17. Describe the classification and economic importance of lichens.

18. Illustrate the structural variations in sporophyte of Jungermanniales.

19. Explain the classification of Pteridophytes proposed by Reiner.

20. Explain the general characteristics and importance of Coniferales and Gnetales.

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D–6933

Sub. Code
34612

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

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. Differentiate ecotype and variety?

2. Define Biotype.

3. Enlist the advantages of numerical taxonomy.

4. Outline the reasons for the rejection of plant species names.

5. Enlist the types and methods of author citation.

6. Outline the medicinal importance of Hydrocharitaceae..

7. Differentiate the organization of monocot and dicot root system.

8. Write a note on cyathium inflorescence.

9. Write the medicinal significance of Opium.

10. List out the useful plants in Myrtaceae.

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss about the importance of molecular taxonomy.

Or

(b) List out the demerits of Engler and Prantl system of plant classification.

12. (a) Describe the principles of limitation.

Or

(b) Define and explain the importance of conservation of plant names.

13. (a) Describe the features and economic importance of Dioscoreaceae.

Or

(b) Illustrate the characters of monocotyledons with special reference to Arecaceae

14. (a) Narrate the special characters of Monochlamydeae with special reference to Aristolochiaceae.

Or

(b) Outline the special features and importance of Asteraceae.

15. (a) Bring out the economic importance of Scrophulariaceae.

Or

(b) Describe the floral characters of Meliaceae.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss in detail about theories of biological classification.

17. Describe the advantages of modern inter-disciplinary approaches in plant taxonomy.

18. Explain the general characters of Polygonaceae.

19. Illustrate the strategies for description of Verbenaceae and Convolvulaceae.

20. Describe the floral characters of Polypetaleae with special reference to Sapindaceae.

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D–6934

Sub. Code
34613

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

First Semester

Botany

BIOLOGICAL TECHNIQUES IN BOTANY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define resolution.
2. Write a short note on polarizing microscope.
3. Enlist the applications of camera lucida.
4. List out the uses of hemocytometer.
5. What is microtomy?
6. Enlist the reagents used for dehydration.
7. Write a short note on preparation of smears and squases.

8. Outline the process of dewaxing the sections.

9. Define stationary phase and mobile phase.

10. Enlist the radioactive isotopes used in biological research.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the applications of photomicrography.

Or

(b) Illustrate the applications of stage and ocular meters.

12. (a) Explain the structure of confocal microscope.

Or

(b) List out the different stains used in microscopy.

13. (a) Describe the stages of dehydration.

Or

(b) Explain about rocking microtome.

14. (a) Describe the principle and applications of agarose gel electrophoresis.

Or

(b) Write about the principle and applications of Northern blotting.

15. (a) Explain the principles and working mechanism of ultracentrifugation.

Or

(b) Discuss about the principle and applications of RFLP.

PART C — (3 × 10 = 30 marks)

Answer any THREE of the following.

16. Write a detailed note on the principle and applications of fluorescence microscope..

17. Explain the principle and applications of TEM.

18. Write and detail account ultra microtomes and their applications.

19. Describe about the principle, mechanism and applications of SDS-PAGE.

20. Describe the technique and applications of PCR.

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D–6935

Sub. Code
34621

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

Botany

CELL BIOLOGY, GENETICS AND PLANT BREEDING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Differentiate rough endoplasmic reticulum from smooth endoplasmic reticulum.

2. What is suicidal bag and its importance.

3. Write about the organization of intermediate filaments.

4. Write the significance of intrinsic protein.

5. Define diffusion?

6. Define protein retrieval in endoplasmic reticulum.

7. Enlist the causes of cytoplasmic male sterility.

8. Define mutagen and enlist chemical mutagens.

9. Differentiate-Back and Test cross.

10. Drought resistant crops.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the structure of cytoskeleton net works

Or

(b) Describe the organization and function of Golgi complex.

12. (a) Describe the pattern of carrier assisted transport across the membrane.

Or

(b) Write a short note on cell cycle and its check points.

13. (a) Explain Mendel's law of Dominance.

Or

(b) Comment on gene interaction.

14. (a) Write short notes on origin and applications of prions.

Or

(b) Discuss the uses of clonal variations in plant breeding.

15. (a) Write notes on breeding methods in cross pollinated plants.

Or

(b) Describe the role of mutation breeding in crop improvement.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the ultra structure eukaryotic cell.

17. Write a detailed accounts on structure and functions of Nucleus.

18. Explain different types of genetic mutations.

19. Give a detailed account of population genetics.

20. Discuss the strategies for the development disease resistant crops.

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D–6936

Sub. Code
34622

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

Botany

PLANT ANATOMY AND EMBRYOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write a short note on Vessels.

2. Write the significance of Transfer cells.

3. Enlist the functions of casparian strips.

4. Define the term bundle sheath.

5. What is annual rings.

6. Enlist the special features of tension wood.

7. List out nutrients in embryo sac.

8. Mention the role of Chalaza.

9. Write the significance of Ruminate Endosperm.

10. Give an example for Polyembryony plants.

PART B — (5 × 5 = 25 marks)

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

11. (a) List out the various types of meristem based on its possion.

Or

(b) Illustrate the ultra structure of plant cell wall.

12. (a) Give an account on vascular differentiation in root.

Or

(b) Give a brief account on vascular tissues of leaf.

13. (a) Describe the strategies for classification of wood.

Or

(b) Write the chemical properties of wood.

14. (a) Describe the structural diversity of wood.

Or

(b) List out the economic importance of wood.

15. (a) Deferenciate the Ameboid and secretory Tapetum

Or

(b) Illustrate apospory and its types.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the structural organization, mode of activity of cambium.

17. Explain the cytological events in stem-root transition.

18. Write an essay commercial woods of South India.

19. Write a detail account on the development of Female gametophyte.

20. Describe the exploitation of apomixis in plant improvement programmes.

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D–6937

Sub. Code
34623

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Second Semester

Botany

PLANT PHYSIOLOGY AND BIOCHEMISTRY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define carrier assisted transport.

2. Write a short note ascent of sap.

3. What is photolysis of water.

4. Enlist the enzymes and functions of thylakoid membrane.

5. Write about the significance Glycolysis.

6. Write any two names of asymbiotic microbes associated with plant nutrition.

7. What are epimers?

8. Enlist the important features of monosaccharides

9. Write about the biological significance of lipids.

10. Write a short note on fatty acid oxidation.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Describe adhesion and cohesion theory of water transport in plants.

Or

(b) Write the various kinds of transpiration in plant physiology.

12. (a) List out the role of micronutrients.

Or

(b) Discuss about C_4 pathway.

13. (a) Write short note on ammonia assimilation in plants.

Or

(b) Give an account on pentose phosphate pathway.

14. (a) Write short notes on MR activity in plants.

Or

(b) Describe the structure of simple protein.

15. (a) Describe about enzyme nomenclature.

Or

(b) Give a brief account on structure of nucleic acids.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the mechanism of water transport through trachieds in xylem.

17. List out the various types of photosynthetic pigments in plants.

18. Explain the stages of biological nitrogen fixation.

19. Describe the structure and functions of starch and glycogen.

20. Discuss about the biosynthesis and functions of fatty acids.

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D–6938

Sub. Code
34631

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Third Semester

Botany

MICROBIOLOGY AND PLANT PATHOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List out any four antibiotics of bacterial origin

2. What are the differences between autotrophic and heterotrophic bacteria

3. What is Prions.

4. Types of virus replication.

5. What are the symptoms of Downy Mildew of Grapes?

6. What are the symptoms of Rust of wheat in barberry host

7. Chemical control measures of citrus canker.

8. What are the various symptoms of necrosis?

9. What are the types of diseases based on their occurrence?

10. List out any four enzymes and their source microorganisms.

PART B — (5 × 5 = 25 marks)

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

11. (a) Draw ultrastructure of Bacteria.

Or

(b) Write notes on culture characteristics of bacteria.

12. (a) Write notes on Phytoplasma.

Or

(b) illustrate ultrastructure of virus.

13. (a) Write notes on transmission of plant viruses.

Or

(b) Explain Koch's Postulate.

14. (a) Write notes on plant disease epidemics.

Or

(b) Write notes on disease forecasting.

15. (a) Write notes on red rot of sugarcane.

Or

(b) Write notes on Anthracnose of mango.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write an essay on Classification of microorganisms.

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

18. Enumerate microbial products.

19. Write an essay on disease triangle and disease cycle.

20. Write an essay on Leaf spot diseases of groundnut and its control measures with suitable diagram.

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D–6939

Sub. Code
34632

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Third Semester

ECOLOGY, BIODIVERSITY CONSERVATION AND ECONOMIC BOTANY

(CBCS 2018-19 Academic Year onwards)

Time : Time hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Differentiate commensalism and mutualism.

2. Name few threatened plants in India.

3. Define biomass.

4. Define Niche.

5. What is Red Data Book?

6. What is meant by IPR?

7. Define trade secret.

8. List out the uses of Nut-meg with botanical description.

9. What is reason for choosing the FlavrSavr™ tomato as a model case for GM food?

10. Differentiate between National Parks and Biosphere Reserve.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write about the Negative Interactions of Species.

Or

(b) Give an account on Red listed plants.

12. (a) Write about the guidelines for research in transgenic plants.

Or

(b) Economic importance of Sunflower and Soyabean.

13. (a) Elaborate on cultivation and uses of Coriandrum and Turmeric.

Or

(b) Write notes on primary and secondary production.

14. (a) Explain loss of biodiversity.

Or

(b) What is meant by ethnobotany? Explain.

15. (a) Write about the Biodiversity Act of India 2002 and 2004.

Or

(b) Write a general account on economic botany.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write in detail on the extraction and uses of Fatty oils.

17. Give a detailed note on case study on the patents of Basmathi rice.

18. Write about the Hotspot biodiversity areas in India in detail.

19. Elaborate food chain and food web.

20. Write about the role of GATT and WTO.

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D–6940

Sub. Code
34633

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Third Semester

ALGAL TECHNOLOGY AND MUSHROOM TECHNOLOGY

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. SCP.
2. Write about spirulina.
3. Write the importance of proper selection of carrier materials.
4. What are the ways of strain improvement in algae?
5. Explain biofertilizers.
6. List out any two edible mushrooms and uses.
7. Write notes on salt solution storage.
8. Define button mushroom
9. Explain protoplast fusion for algae.
10. Name any two pest attacking mushrooms.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write in detail – immobilization technique and commercial value of BGA.

Or

(b) Write about the mass cultivation of *Spirulina*.

12. (a) Explain - Algae as biofuel.

Or

(b) List out the commercial importance of microalgae.

13. (a) List out the nutritional importance of mushroom.

Or

(b) Elaborate on low cost mushroom farm design of production.

14. (a) Explain the role of microalgae in nitrogen fixation.

Or

(b) Explain the role of seaweeds in agriculture.

15. (a) How do you prepare pure culture for fungi?

Or

(b) Write an elaborate note on cultivation of *Pleurotus* sp.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Give a detailed note on economic importance of algae.

17. Write the role of algae as biofertilizer in biotechnology.

18. Write about the cultivation methods of various mushrooms.

19. Explain the factors affecting mushroom cultivation.

20. Write about the mushroom packing and preservation techniques.

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D–7347

Sub. Code
34641

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Fourth Semester

Botany

PLANT MOLECULR BIOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define: Restriction Enzymes

2. Define: Chromatin

3. Write any two bacterial species names involved in biological N_2 fixation in legumes.

4. List any two chemical agents mediating transformation of genes in plants.

5. Cry protein.

6. Golden Rice.

7. Molecular Pharming

8. What are the advantages of chloroplast engineering?

9. What are the core plant hormones involved in regulating gene expression of plants?

10. Cytoplasmic male sterility.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write notes structural features of a typical plant gene.

Or

(b) Write notes on classification and functions of storage proteins.

12. (a) Write notes on reporter genes.

Or

(b) Write notes on physical methods of plant gene transformation.

13. (a) Write notes on Micro satellites.

Or

(b) Explore developing microbial-resistant plant genetic engineering.

14. (a) Write notes on types of Ti-plasmid and their genome organizations.

Or

(b) Write notes on delayed fruit ripening by employing antisense RNA technology.

15. (a) Write notes on targeting of nuclear encoded cytoplasmic protein to chloroplast compartments.

Or

(b) Write short notes on tagging, mapping and cloning of plant genes.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write an essay on tools and general methodology of plant genetic engineering.

17. Illustrate agro bacterium mediated gene transformation in plants.

18. Write an essay on developing transgenic plants with virus resistance.

19. Write essay on Molecular Markers – STS, RAPD, SCAR and AFLP for genetic diversity.

20. Write an essay on nuclear genome organization in plants.

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D–7348

Sub. Code
34642

DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, MAY 2021.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Fourth Semester

BIOSTATISTICS, BIOPHYSICS AND BIOINFORMATICS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is data collection and its types?

2. Calculate mean and median
   12.0, 9.5, 13.5, 7.2, 10.5, 6.3, 12.5

3. Define standard error.

4. Define term database.

5. What is the Dual nature of light?

6. Explain about absorption spectra in molecules.

7. Write about NCBI database.

8. Write about the sampling methods

9. What is BLAST?

10. What is the role of internet in bioinformatics?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Explain the measures of Central tendency.

Or

(b) Describe the types of population.

12. (a) What is sampling? Give its characteristics.

Or

(b) Comment on Standard deviation.

13. (a) Write about the laws of Thermodynamics.

Or

(b) Write about efficiency of atoms.

14. (a) Explain the applications of bioinformatics in detail.

Or

(b) Describe any three types of sequence alignment methods.

15. (a) Explain multiple sequence alignment in detail.

Or

(b) Write short note on BLAST.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the diagrammatic and graphical representation of data.

17. Write a detail on biological databases and its various uses.

18. Write a detail on phylogenetic tree analysis.

19. Explain FASTA along with its steps.

20. Write about the characteristics of Solar radiation.

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D–7349

Sub. Code
34643

DISTANCE EDUCATION

M.Sc.(Botany) DEGREE EXAMINATION.

MAY 2021 EXAMINATION

&

MAY 2020 ARREAR EXAMINATION

Fourth Semester

HORTICULTURE AND PLANT TISSUE CULTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : 3 hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is seed dormancy?
2. What is vermiculture?
3. What is pruning?
4. What are Bonsai plants?
5. What is micropropagation?
6. Write any four applications of protoplast fusion.
7. Define viability.
8. Why certification of seeds is essential?

9. What is budding?

10. Write about sprinkler systems.

PART B — (5 × 5 = 25 marks)

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

11. (a) List out the importance of micro and macro nutrients.

Or

(b) Write about the certification of seeds.

12. (a) Give in detail on the cultivation of water plants.

Or

(b) Write about the different types of explants used commercially.

13. (a) List out the role of hormones used in regeneration.

Or

(b) Write notes on terrace garden and lawn making.

14. (a) What are the importance of using growth hormones and regulators in horticulture?

Or

(b) Write about the different sterile and soil mixtures.

15. (a) Describe somatic embryogenesis.

Or

(b) Explain about suspension culture.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Name of the different types of water irrigation and explain them.

17. Explain the different methods of vegetative propagation.

18. Write about the different indoor gardening techniques.

19. Write in details on the methods involved in the production of artificial seeds.

20. Write about the various sterilization techniques.

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