

<b>D-3214</b>
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<b>Sub. Code</b>
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<b>34611</b>
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DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2019.

First Semester

PLANT DIVERSITY

(CBCS 2018–19 Academic year onwards)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Enlist the importance of Algae in agriculture.
2. Write about the sources and uses of Agar agar.
3. Write short note on Soridia.
4. Write about the special features of sporulation of fungi.
5. Differentiate Symbiotic and non-symbiotic microbe.
6. Write the types of rhizoids.
7. Mention the special features and organization of Gemma cup.
8. Enlist the special features of Azolla.
9. Write short note on Lycopsidea.
10. Write the significance of living fossils.

SECTION B — ( $5 \times 5 = 25$  marks)

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

11. (a) Write the important characteristic features of blue green algae.

Or

- (b) Describe the organization of algal Thallus.

12. (a) Explain the structure of the basidiocarp of Agaricus.

Or

- (b) Write an account on classification of lichens.

13. (a) Illustrate the structure of Apothecium.

Or

- (b) List out the economic importance of Bryophyte.

14. (a) Describe the sporophyte of Marchantiales.

Or

- (b) Give an account on fossil pteridophyte.

15. (a) Write a note on Reiner's classification of Pteridophytes.

Or

- (b) List out the salient features of Medullosa.

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

Answer any THREE of the following

16. Explain the reproduction patterns on algae.
  17. Describe the classification of fungi according to Alexopoulos and Mims.
  18. Illustrate the structure and reproduction pattern in Lichens.
  19. Explain the structural variations in gametophytes of Anthocerotales.
  20. Explain the general characters of Gymosperms.
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<b>D-3215</b>
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<b>Sub. Code</b>
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<b>34612</b>
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**DISTANCE EDUCATION**

**M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2019.**

**First Semester**

**PLANT TAXONOMY**

**(CBCS – 2018-19 Academic Year Onwards)**

**Time : Three hours**

**Maximum : 75 marks**

**SECTION A — (10 × 2 = 20 marks)**

**Answer ALL questions.**

1. What is subspecies?
2. Define Ecad.
3. Enlist the advantages of Chemotaxonomy.
4. Outline the basic principle of ICBN.
5. Enlist the criteria for Publication of new plant species names.
6. Write any two medicinally important plants in Dioscoreaceae.
7. Enlist different types of root system.
8. Define umbel inflorescence.
9. Enlist the special features of Opium.
10. List out the basic requirements for preparing Margossa.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Discuss about the genesis and importance of plant taxonomy.

Or

- (b) Describe the advantage of Bentham and Hooker system of plant classification.

12. (a) Describe the principles of priority.

Or

- (b) Explain the importance of draft bio code.

13. (a) Describe the salient features of Hydrocharitaceae.

Or

- (b) Outline the characters of Cyperaceae.

14. (a) Discuss about the unique characters of Loranthaceae.

Or

- (b) Outline the importance of head inflorescence.

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

Or

- (b) Describe the floral characters of Mimosaceae.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the scope and applications of Binomial system of nomenclature.
  17. Explain the strategies for conservation of names of plant species.
  18. Explain the general characters of Amaranthaceae.
  19. Illustrate the strategies for description and floral formula of Scrophulariaceae..
  20. Describe the floral characters of Polypetaleae with special reference to Geraniaceae.
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<b>D-3216</b>
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<b>Sub. Code</b>
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<b>34613</b>
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DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

First Semester

Botany

BIOLOGICAL TECHNIQUES IN BOTANY

(CBCS 2018–19 Academic year onwards)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define magnification.
2. List out the uses of digital imaging.
3. Enlist the factors determining the resolution of a light microscope.
4. List out five microscopic stains.
5. Define fixative.
6. Compare the hand sections and microtome sections.
7. What are the histochemical stains used to localize proteins.
8. Enlist the mounting reagents used in microscopy.

9. Define isoelectric pH.
10. Outline the uses of Taq DNA polymerase.

SECTION B — ( $5 \times 5 = 25$  marks)

Answer ALL questions.

11. (a) Explain the principle and applications of fluorescence microscope.

Or

- (b) Describe the applications of micrometry.

12. (a) Compare the simple and compound microscope.

Or

- (b) Comment on the applications of Hemocytometer.

13. (a) Write about applications of sledge microtome.

Or

- (b) Explain the method of sectioning of plant tissue.

14. (a) Explain the uses of maceration techniques.

Or

- (b) Write short notes on PAGE.

15. (a) Describe the principle and applications of autoradiography.

Or

- (b) Discuss about the applications of AFLP.



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

Answer any THREE of the following

16. Explain the principle and applications of phase contrast microscope.
  17. Explain the organization, principle and applications of SEM.
  18. Explain the procedure of permanent microslide preparation.
  19. Describe the principle and application of HPLC.
  20. Give a detailed account on the principle, procedure and applications of western blotting.
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<b>D- 3217</b>
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<b>Sub. Code</b>
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<b>34621</b>
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**DISTANCE EDUCATION**

**M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2019.**

**Second Semester**

**CELL BIOLOGY, GENETICS AND PLANT BREEDING**

**(CBCS – 2018-19 Academic Year Onwards)**

**Time : Three hours**

**Maximum : 75 marks**

**SECTION A — (10 × 2 = 20 marks)**

**Answer ALL questions.**

1. Write any two salient features of Eukaryotic cell.
2. Why the Lysosomes are called suicidal bags?
3. Write the function of Microtubules.
4. Write the location of Membrane protein.
5. What is mean by Meiosis?
6. Define the term Chiasma.
7. Write the defeats of Cytoplasmic mate sterility.
8. Write the cases of Mutation.
9. Write the significance of Hybrid vigour.
10. What is Stress?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Explain the structure of nucleus.

Or

- (b) Mitochondria is a power house of the cell-Discuss.

12. (a) Give brief account on transport of ions & molecules across the membrane.

Or

- (b) Write short notes on mitosis.

13. (a) Discuss about the Origin and application of Prions.

Or

- (b) Describe the types and significance of Polyploidy.

14. (a) Write short notes on Gene mapping.

Or

- (b) Discuss the role of genetic variability 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.

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

Answer any THREE questions.

16. Describe the structure and function of mitochondria.
  17. Write detail account on cell cycle.
  18. Explain the mechanism of crossing over.
  19. Write a detailed account of population genetics.
  20. Write the steps involved in breeding of diseases resistance and stress tolerance.
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<b>34622</b>
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**DISTANCE EDUCATION**

**M.Sc. DEGREE EXAMINATION, DECEMBER 2019.**

**Second Semester**

**Botany**

**PLANT ANATOMY AND EMBRYOLOGY**

**(CBCS – 2018-19 Academic Year Onwards)**

**Time : Three hours**

**Maximum : 75 marks**

**SECTION A — (10 × 2 = 20 marks)**

**Answer ALL questions.**

1. Write the role of Apical meristem.
2. List out the components of Phloem.
3. Mention the location of Casparian strips.
4. Write the importance of Cambium.
5. Write the significance of Growth rings.
6. Write the impotence of Compression wood.
7. List out the kinds of Stigma.
8. Mention the role of Embryo sac.
9. Write the significance of Perisperm.
10. Give an example for Polyembryony plants.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write the classification of meristem based on position.

Or

- (b) Give an account on companion cells.

12. (a) Describe the vascular differentiation in root.

Or

- (b) Write short notes on cork cambium.

13. (a) Explain about floral vasculature.

Or

- (b) Write the classification of wood.

14. (a) List out the uses of wood.

Or

- (b) Describe in detail about compression wood.

15. (a) Write short notes on development of female gametophyte.

Or

- (b) Describe on Apomixis and its types.

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

Answer any THREE questions.

16. Describe the electron microscopic structure of cell wall.
  17. Write an essay on cambial variants.
  18. Write a detailed account on molecular aspects of wood differentiation.
  19. Illustrate the types of endosperm.
  20. Write an essay on Agamospermy in plant improvement programmes.
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<b>Sub. Code</b>
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<b>34623</b>
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DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Botany

PLANT PHYSIOLOGY AND BIOCHEMISTRY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Osmosis.
2. Write a short note on transpiration.
3. Enlist the functions of Thylakoids.
4. Define Photophosphorylation.
5. Write about the significance Glycolysis.
6. Write any two names of Nitrogen fixing micro organisms.
7. What are Stereoisomers?
8. Enlist the important characteristics of Isoenzymes.



9. Write about the biological significance of Fatty acids.
10. Write a short note on Oxidation.

SECTION B — ( $5 \times 5 = 25$  marks)

Answer ALL questions.

11. (a) Describe in detail about water transport process.

Or

- (b) Define transpiration and discuss about its significance.

12. (a) Explain the structure and function of chloroplast.

Or

- (b) Discuss about crassulacean acid metabolism.

13. (a) Write short note on electron transport in mitochondria.

Or

- (b) Give an account on pentose phosphate pathway.

14. (a) Write short notes on ammonium assimilation.

Or

- (b) Describe the structure of protein.

15. (a) Explain the classification of enzymes.

Or

- (b) Give a brief account on nucleotide synthesis.

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

Answer any THREE questions.

16. Write an account of absorption of water.
  17. Explain the  $C_4$  carbon cycle.
  18. Give account on nutrient uptake and transport mechanism.
  19. Describe the classification, Structure and properties' of carbohydrates.
  20. Explain the classification and structure of lipids.
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<b>Sub. Code</b>
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<b>34631</b>
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DISTANCE EDUCATION

M.Sc. (Botany) DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

Botany

MICROBIOLOGY AND PLANT PATHOLOGY

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Heterotrophs.
2. Write short note on Fibriate.
3. What is mean by Prion?
4. Proteolitic enzyme
5. What is Lag phase?
6. Define Stomata.
7. Write the symptom of Citrus canker.
8. Cuticular wax
9. B – Lactum antibiotic
10. Write short on Probiotics.

PART B — ( $5 \times 5 = 25$  marks)

Answer ALL questions.

11. (a) What is pure culture? Write briefly about batch culture.

Or

- (b) List out the economic importance of bacteria.

12. (a) Write short notes on culture of virus.

Or

- (b) Write briefly account on virus.

13. (a) Comment on plant disease cycle.

Or

- (b) Write about the control measure of plant diseases.

14. (a) Write briefly about the physical defense mechanism in plants.

Or

- (b) Explain the host pathogen interactions.

15. (a) How will you identify the plant diseases?

Or

- (b) Write notes on Red rot of sugarcane.

PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Write in detail the various stages of bacterial growth.
  17. Describe in detail the replication of virus.
  18. Discuss in detail the production of any one antibiotics.
  19. Explain in detail about the symptoms pathogens and control measure of citrus canker.
  20. Elaborate in detail on enzyme production with an example.
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<b>34632</b>
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**DISTANCE EDUCATION**

**M.Sc. DEGREE EXAMINATION, DECEMBER 2019.**

**Third Semester**

**Botany**

**ECOLOGY, BIODIVERSITY CONSERVATION AND  
ECONOMIC BOTANY**

**(CBCS – 2018-19 Academic Year Onwards)**

**Time : Three hours**

**Maximum : 75 marks**

**PART A — (10 × 2 = 20 marks)**

**Answer ALL questions.**

1. Define Ecosystem.
2. What is Ecotone?
3. Give an example for Mutualism.
4. Define the term Agrobiodiversity.
5. Write the use of Red data book.
6. Write the expansion GATT.
7. Write the significance of Patent.
8. Write the importance of Copyright.
9. Write the medicinal use of Pepper.
10. List the medicinal use of Rauwolfia.

PART B — ( $5 \times 5 = 25$  marks)

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

11. (a) Write the concept and dynamics of ecosystem.

Or

- (b) Differentiate between competition and commensalism.

12. (a) Explain the types of biodiversity.

Or

- (b) Write brief notes on phytogeographic zones of India.

13. (a) Give an account on WTO.

Or

- (b) Write short notes on Trade mark.

14. (a) Comment on GM foods with suitable examples.

Or

- (b) Describe the cultivation and uses of Cardamom.

15. (a) Discuss the harvesting, extraction and uses of Coconut.

Or

- (b) Explain the description, cultivation and uses of Basil.

PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Write detailed account on Ecological succession.
17. Describe the role of Agrobiodiversity.

18. Discuss in detail about the conservation of biodiversity.
  19. Explain different types of IPR.
  20. Write an account on the following spices and condiments.
    - (a) Ginger
    - (b) Chilly
    - (c) Turmeric.
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<b>Sub. Code</b>
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<b>34633</b>
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DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

Botany

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. Write any two uses of *Spirulina*.
2. Write the medicinal importance of *Penicillin*.
3. Write the role of Poisonous mushroom.
4. Define the term Biofertilizers.
5. Define Mycelium.
6. Write short on Incubation.
7. Write the significance of Vitamins.
8. Write a note on a bacterial flagella.
9. Write the nutritional importance of *Agaricus*.
10. Define the mushroom spawn.

## SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Describe the thallus organization of fresh water algae.

Or

- (b) Write the occurrence and distribution of marine algae.

12. (a) Discuss the methods and application of immobilization.

Or

- (b) Mention the potential uses of algae in agriculture.

13. (a) Propose the protoplast fusion technique for macro algae.

Or

- (b) Write the role of nif genes in nitrogen fixation.

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

Or

- (b) Present the farm design for production of low cost mushroom.

15. (a) Write the procedure for quality spawn preparation.

Or

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

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

Answer any THREE of the following questions.

16. Present upstream and downstream process in mass cultivation of algae.
  17. Write the role of seaweeds in biotechnology.
  18. Write about mushroom packing and preservation techniques.
  19. List out various factors affecting mushroom cultivation.
  20. Give an elaborate note on mushroom marketing strategies in India.
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