

U.G. DEGREE EXAMINATION - JUNE 2021

BOTANY

FIRST YEAR

PLANT DIVERSITY - I

Time: 3 Hours

Maximum Marks: 75

SECTION - A

(5x 5 = 25 Marks)

Answer any FIVE questions.

1. Discuss the general characteristics features of Algae.
2. Discuss the vegetative and asexual methods of reproduction in Fungi.
3. Write notes on the structure of capsule in polytrichum sporophyte.
4. Explain the structure and properties of bacterial cell wall.
5. Write notes on disease management.
6. Write notes on ascospores.
7. Explain budding.
8. Write an account on Lichens.

SECTION - B

(5 x 10 = 50 Marks)

Answer any FIVE questions.

9. Describe in detail the structure and reproduction of Sargassum.
10. Write an essay on Pencillin.
11. Describe the sexual reproduction in Anthoceros.
12. With neat diagram discuss the lysogenic life cycle of virus.
13. Write notes on :
 - (a) Ecological importance of bryophytes.
 - (b) Lichens.
14. Write in detail about thallus structure of Riccia. Add a note on its mode of reproduction.
15. Write an account on disease management with special reference to blight and blast.
16. Give a brief account on :
 - (a) Role of algae in medicine and industries.
 - (b) Role of bacteria in food and sewage treatment.

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FIRST YEAR

PLANT DIVERSITY I

Time: 3 Hours

Maximum Marks: 70

PART - A

(5 x 2 = 10 Marks)

Answer all the FIVE questions.

1. Autotroph
2. Columella
3. Gemma
4. Peptidoglycan
5. Haustorium

PART - B

(4 x 5 = 20 Marks)

Answer any FOUR questions.

6. Describe the stages in asexual reproduction of Volvox.
7. How are the conidia produced in Penicillium?
8. Explain the thallus structure of Riccia.
9. Describe the morphology of a bacteriophage.
10. Write a note on pest control management in plants.
11. How are fungi used as biocontrol agents?
12. Give short notes on dinoflagellates.

PART - C

(4 x 10 = 40 Marks)

Answer any FOUR questions.

13. What are the industrial uses of algae?
14. Describe the life cycle of Mucor.
15. Explain the ways of vegetative reproduction in Anthoceros.
16. With a neat diagram, describe the cell type, flagellation and structure of a bacterium.
17. How do plants defend themselves from pathogens?
18. Describe the structure of the capsule of Polytrichum.
19. Explain in detail the classification of fungi by Ainsworth (1971).

U.G. DEGREE EXAMINATION - JUNE 2021

FIRST YEAR

BOTANY

PLANT DIVERSITY - II

Time: 3 Hours

Maximum Marks: 75

PART - A

(5 x 5 = 25 Marks)

Answer any FIVE questions.

1. Discuss the general characteristics features of Pteridophytes.
2. Explain the structure of Lycopodium strobilus.
3. Write notes on the structure of male cone in pinus.
4. Describe the anatomical structure of Marsilea leaf.
5. Write notes on the structure of reconstructed Rhinea.
6. Write notes on the origin of Gymnosperms.
7. Explain origin and diversification of flowering plants.
8. Write notes on the sporophytic life cycle of pteridophytes.

PART - B

(5 x 10 = 50 Marks)

Answer any FIVE questions.

9. Write in detail the classification of pteridophytes. Highlight the features of gamatophytic generation.
10. Describe in detail the structure anatomy and reproduction of Psilotum.
11. Describe in detail the characteristic features of Gymnosperms and its classification.
12. Describe in detail the structure and reproduction in cycas.
13. Write a detailed account on Geological time scale.
14. Describe in detail the morphology, anatomy and reproduction of Selaginella.
15. Discuss in detail the types of fossil. Add a note on the formation of fossil.
16. Write an essay about origin and diversification of land plants.

U.G. DEGREE EXAMINATION - JUNE 2021**BOTANY****FIRST YEAR****PLANT DIVERSITY II****Time: 3 Hours****Maximum Marks: 70****PART - A****(5 x 2 = 10 Marks)****Answer all Five questions.**

1. Apogamy
2. Elaters
3. Microsporophyll
4. Coralloid roots
5. Fossil

PART - B**(4 x 5 = 20 Marks)****Answer any FOUR questions.**

6. What is the type of life cycle that is followed by Pteridophytes?
7. What are the various types of steles occurring in the stem of Lycopodium?
8. Give an account on the origin of Gymnosperms.
9. Describe secondary growth in Cycas.
10. How are fossils classified?
11. Describe the internal structure of sporocarp in Marsilea.
12. Describe the habit of Gnetum.

PART - C**(4 x 10 = 40 Marks)****Answer any FOUR questions.**

13. Explain in detail the classification of Pteridophytes by Smith (1995).
14. Describe the structure of archegonium and antheridium in Equisetum.
15. Give a brief account on the general characteristics of Gymnosperms.
16. Explain the external morphology of Pinus.
17. How are fossils formed?
18. Compare the normal root with the coralloid root of Cycas.
19. Explain the morphology of a female cone in Pinus.

U.G. DEGREE EXAMINATION - JUNE 2021
BOTANY
SECOND YEAR
PLANT TAXANOMY AND ECONOMIC BOTANY

Time: 3 Hours

Maximum Marks: 75

PART - A

(5 x 5 = 25 Marks)

Answer any FIVE questions.

1. Enumerate structure of leaf.
2. Write about the floral characters of Annonaceae.
3. Give the account of Binomial Nomenclature.
4. Write about types and Structure of the root.
5. Discuss the economic importance of Aricaceae.
6. Explain the structure of flower.
7. Explain the types of fruits with example.
8. Comment on plant disease management.

PART – B

(5 x 10 = 50 Marks)

Answer any FIVE questions.

9. Illustrate with examples the plant part modifications studied by you.
10. Explain different types of phyllotaxy with suitable examples.
11. Explain the concepts of taxonomy.
12. Write an account on the general characters of the family Poaceae. Add a note On its economical importance.
13. Write notes on Bentham and Hooker's Classification.
14. Write an account on the general characters of the family Fabaceae. Add a note On its economical importance.
15. Write an account on the general characters of the family Nympheaceae. Add a note on its economical importance.
16. Give brief account on cultural practices followed for medicinal plants.

U.G. DEGREE EXAMINATION - JUNE 2021
BOTANY
SECOND YEAR
PLANT ANATOMY AND EMBRYOLOGY

Time: 3 Hours

Maximum Marks: 75

PART - A

(5 x 5 = 25 Marks)

Answer any FIVE questions

1. Write notes on Complex tissues.
2. Write about the structure of embryo.
3. Give the account on structure of monocot root.
4. Explain the anatomy of dicot leaf.
5. Write notes on Apomixis.
6. Explain the structure of an embryo sac.
7. Write notes on Nodal Anatomy.
8. Write notes on triple fusion.

PART - B

(5 x 10 = 50 Marks)

Answer any FIVE questions

9. How would you differentiate monocot root with that of dicot root?
10. Explain the anatomy of monocot leaf.
11. Explain the structure of an ovule.
12. Write an account on the classification of tissue.
13. Write notes on meristem.
14. Write an account on structure of microsporangium.
15. Write an account on Pollination.
16. Give brief account on double fertilization.

U.G. DEGREE EXAMINATION - JUNE 2021**BOTANY****THIRD YEAR****CELL BIOLOGY AND GENETICS****Time: 3 Hours****Maximum Marks: 75****PART - A****(5 x 5 = 25 Marks)****Answer any FIVE questions**

1. Discuss the structure and functions of plasma membrane.
2. Explain the structure and functions of golgi complex.
3. Sketches the stages of mitosis.
4. Focus the Mendalian law of inheritance.
5. Illustrate the molecular structure of DNA.
6. Compare and contrast the prokaryotic and eukaryotic cell.
7. Analyze the structure and functions of endoplasmic reticulum.
8. Explain test cross with suitable examples.

PART - B**(5 x 10 = 50 Marks)****Answer any FIVE questions**

9. Outline the ultra structure of plant cell.
10. Compose the structure and functions of mitochondria.
11. Express the stages of meiosis.
12. Expound the salient features and mechanism of crossing over.
13. Elucidate the mechanism of DNA replication.
14. Assign structure and types of RNA.
15. Construct the procedure for chromosome mapping.

16. Illustrate the phases of cell cycle. Add note on its significance.

U.G. DEGREE EXAMINATION - JUNE 2021**BOTANY****THIRD YEAR****PLANT PHYSIOLOGY****Time: 3 Hours****Maximum Marks: 75****PART - A****(5 x 5 = 25 Marks)****Answer any FIVE questions**

1. Discuss the mechanism of water absorption
2. Compare and contrast the photo system I and photosystem II.
3. Assign the regulation of β -oxidation of fatty acid.
4. Bring out the causes and breaking of seed dormancy.
5. Elucidate the mechanism and applications of vernalization.
6. Expound the physical force theories of ascent of sap.
7. Enumerate the significance of photorespiration.
8. Explain the biosynthesis of amino acids.

PART – B**(5 x 10 = 50 Marks)****Answer any FIVE questions**

9. Critically analyse the types and applications of transpiration.
10. Describe the Kreb's cycle in detail and add a note on its significance.
11. Write an essay on nitrogen metabolism.
12. Express the physiological role of auxin and gibberellins.
13. Focus the classification and significance of photoperiodism.
14. Illustrate the types of stomach in angiosperms. Mention its importance.
15. Elaborate on electron transport system in detail.
16. Visualize the physiology of fruit ripening.

U.G. DEGREE EXAMINATION - JUNE 2021

BOTANY

THIRD YEAR

ECOLOGY AND FORESTRY

Time: 3 Hours**Maximum Marks: 75****PART - A****(5 x 5 = 25 Marks)****Answer any FIVE questions.**

1. Enumerate the various types of ecosystem.
2. Explain and draw the nitrogen cycle process.
3. Describe about the ecological niches.
4. How do you calculate the abundance and frequency of vegetation by Quadrature method?
5. Discuss about the sources and effects of water pollution.
6. Write a note on coniferous forest ecosystem.
7. Describe about the silviculture.
8. Write a short note on Coppice forest system.

PART - B**(5 x 10 = 50 Marks)****Answer any FIVE questions.**

9. Discuss in details about the Synecology.
10. Explain the ecological pyramids and its types.
11. Write a detailed account on any two types of ecological adaptation.
12. Give an account on transects method of studying plant communities.
13. Discuss about the causes, effects and control measures of land pollution.
14. Explain the phosphorous cycle and its ecological function.
15. Discuss about the evergreen and deciduous forest.
16. Give a detailed account on the agro forestry and its uses.

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BOTANY

THIRD YEAR

BIOCHEMISTRY AND BIOTECHNOLOGY

Time: 3 Hours

Maximum Marks: 75

PART - A

(5x5 = 25 Marks)

Answer any FIVE questions.

1. Write a short note on properties of carbohydrates.
2. Discuss about the structure of amino acids.
3. Write a note on tertiary structure of proteins.
4. Outline the properties of enzymes.
5. Enumerate the factors affecting enzyme action.
6. Write a note on T4 Bacteriophages.
7. Explain the applications of plant tissue culture.
8. Describe any one of the methods of protoplasmic fusion.

PART - B

(5 x 10 = 50 Marks)

Answer any FIVE questions.

9. Write a detailed account on various types of isomerism.
10. Discuss in detail about the classification of amino acids with suitable examples.
11. Outline the classification of lipids with suitable examples.
12. Discuss about the classification of enzymes.
13. Give an account on DNA technology.
14. Enumerate the various steps involved in gene cloning technology.
15. Give a detailed account on the organogenesis with suitable illustration.
16. Discuss about the protoplast culture techniques and its significance in crop improvement.

U.G. DEGREE EXAMINATION - JUNE 2021**BOTANY****FIRST YEAR****GENERAL CHEMISTRY****Time: 3 Hours****Maximum Marks: 75****PART - A****(5x5 = 25 Marks)****Answer any FIVE questions.**

1. Write notes on indicators.
2. With suitable examples explain molarity and normality.
3. Explain fractional crystallization.
4. Explain catalyst and its properties.
5. What are the types and properties of polymers?
6. Define antibiotics. List out the uses of penicillin and streptomycin.
7. Give brief account on common safety methods in a laboratory.
8. Bring out the causes and effects of water pollution.

PART - B**(5 x 10 = 50 Marks)****Answer any FIVE questions.**

9. What are the types of chemical bonds? Describe any three types of bonds with examples.
10. With suitable examples explain the following organic reaction
(i) Addition (ii) Substitution (iii) Polymerization
11. Define chromatography. Write the principles and applications of thin layer chromatography.
12. Explain the Michaelis-Menten equation.
13. Write preparation and applications of the following:
(i) Polythene (ii) Teflon

14. Classify carbohydrates with suitable examples. Write the properties of disaccharides.
15. Define water soluble vitamins. Discuss sources and deficiency states of any three of them.
16. Define pollution. Bring out the reasons and effects of air pollution.

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1. Hydrogen bond
2. Sublimation
3. Catalyst
4. Starch
5. Acid rain

PART - B**(4 x 5 = 20 Marks)****Answer any FOUR questions**

6. What are the basic types of chemical bonds?
7. How is fractional distillation done?
8. What are the applications of catalysts?
9. Give a note on analgesics and antipyretics.
10. What are the general laboratory practices that ensure safety?
11. Giving an example, explain the formation of a covalent bond.
12. What are acid-base indicators?

PART - C**(4 x 10 = 40 Marks)****Answer any FOUR questions**

13. Explain molarity and molality with an example of each.
14. What is the basic principle of chromatography?
15. Explain Michaelis –Menton equation.
16. Give a broad outline of vitamins.
17. Describe in detail the harmful effects of water pollution.
18. What are nucleophiles and electrophiles?
19. Give an account on the types and properties of polymers.

U.G. DEGREE EXAMINATION - JUNE 2021**BOTANY****SECOND YEAR****ANIMAL DIVERSITY****Time: 3 Hours****Maximum Marks: 75****PART - A****(5 x 5 = 25 Marks)****Answer any FIVE questions.**

1. Classify phylum- mollusca with examples upto class level.
2. Describe the structure and role of contractile vacuoles in paramecium.
3. Explain the digestive system of Earthworm.
4. Give an account on physiology of digestion in prawn.
5. Write short note on external features of calotes.
6. Explain the types of respiration in frog.
7. Describe the types of feather in pigeon.
8. Give an account on the arterial system of Rabbit.

PART – B**(5 x 10 = 50 Marks)****Answer any FIVE questions.**

9. Analyse the outline classification of phylum platyhelminthes upto classes with examples.
10. Bring out the life history of obelia.
11. Write an explanation on the feeding and excretory system of prawn.
12. Give an account of the water vascular system in starfish..
13. Describe the respiratory mechanism of shark.
14. Describe the structure and working mechanism of heart in frog.
15. Explain the reproductive system of calotes with sketches.
16. Explain the Urinogenital system of Rabbit.