

**M.Sc. DEGREE EXAMINATION, JUNE/JULY - 2019**

**(First Year)**

**BOTANY**

**Paper-I: Biology and Diversity of Algae, Bryophytes, Pteridophytes and Gymnosperms**

**Time : 3 Hours**

**Maximum Marks : 70**

**SECTION - A**

**(5 × 6 = 30)**

Answer any FIVE Questions from the following

- Q1)** Classification of Cyanophyta
- Q2)** Fossil Algae
- Q3)** Elaters
- Q4)** Gemmae Cups
- Q5)** Psilotom
- Q6)** Stele in Lycopsida
- Q7)** Wood in Gnetum
- Q8)** Distribution of Gymnosperms

**SECTION - B**

**(4 × 10 = 40)**

Answer ALL Questions

- Q9)** a) Describe the structure, reproduction and life cycle patterns of chlorophyta.  
(OR)  
b) Describe the economic importance of algae.
- Q10)** a) Give an account of thallus organization, reproduction and evolutionary trends in hepaticopsida.  
(OR)  
b) Give an account of thallus organization, reproduction and evolutionary trends in bryopsida.
- Q11)** a) Describe the structure and reproduction in Sphaenopsida.  
(OR)  
b) Describe the structure and reproduction in Pteropsida.
- Q12)** a) Describe the reproduction and evolutionary tendencies in Bennettitales.  
(OR)  
b) Classify Gymnosperms.



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**Paper-II: Systematics of Angiosperms and Plant Ecology**

**Time : 3 Hours**

**Maximum Marks : 70**

**SECTION – A**

**(5 × 6 = 30)**

Answer any FIVE Questions from the following

- Q1)** Herbalists
- Q2)** Primitive flower in Engler and Prantl system of classification
- Q3)** Intraspecific category
- Q4)** Alkaloids
- Q5)** Energy flow
- Q6)** Homeostasis
- Q7)** Alternate energy sources
- Q8)** Continental drift

**SECTION – B**

**(4 × 10 = 40)**

Answer ALL Questions

- Q9)** a) Describe the present vegetation types and distribution.  
OR  
b) Give a brief account of post-Darwinian systems of classifications.
- Q10)** a) Enumerate the salient features of plant nomenclature.  
OR  
b) Explain the role of cytology in resolving taxonomic disputes.
- Q11)** a) Give an account of biogeochemical cycle with reference to nitrogen.  
OR  
b) Write an essay on plant succession.
- Q12)** a) Explain the methods for the conservation of natural resources.  
OR  
b) Describe the principles of plant geography.



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**Paper-III: Cytology, Genetics and Plant Breeding**

**Time : 3 Hours**

**Maximum Marks : 70**

**SECTION – A**

**(5 × 6 = 30)**

Answer any Five Questions from the following

- Q1)** Prokaryotic Cell
- Q2)** Nucleolus
- Q3)** Inversions
- Q4)** Autopolyploids
- Q5)** Tetrad Analysis
- Q6)** Cytoplasmic Inheritance
- Q7)** Plant Introduction
- Q8)** Clonal Selection

**SECTION – B**

**(4 × 10 = 40)**

Answer ALL Questions

- Q9)** a) Give an account of cell cycle in eukaryotes.  
(OR)  
b) Write an essay on karyotype evolution.
- Q10)** a) Describe the numerical alterations in chromosomes.  
(OR)  
b) Describe the evolution of major crop plants.
- Q11)** a) Explain the salient features of chi-square test for goodness of fit.  
(OR)  
b) Explain the role of mutations in plant breeding.
- Q12)** a) Describe the breeding methods in self pollinated crops.  
(OR)  
b) Describe the breeding methods in cross pollinated crops.

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**Paper-IV: Plant Physiology and Metabolism**

**Time : 3 Hours**

**Maximum Marks : 70**

**SECTION – A**

**(5 × 6 = 30)**

Answer any FIVE Questions from the following

- Q1)** Membrane Transport Proteins.
- Q2)** Cohesion Theory.
- Q3)** Km Value.
- Q4)** ATP Synthesis.
- Q5)** Glyoxalate Cycle.
- Q6)** Mechanism of Nitrogen Fixation.
- Q7)** Signal transduction.
- Q8)** HR and SAR processes.

**SECTION – B**

**(4 × 10 = 40)**

Answer ALL Questions

- Q9)** a) Describe translocation of water.  
OR  
b) Explain the role of macro and micro nutrients.
- Q10)** a) Describe the mechanism of electron and proton transport.  
OR  
b) Write an essay on glycolysis.
- Q11)** a) Give the classification of proteins and their synthesis.  
OR  
b) Describe the structure and functions of storage and membrane lipids.
- Q12)** a) Write an essay on photoperiodism and role of vernalisation.  
OR  
b) Describe the physiological effects and mechanism of auxins and gibberellins.

