

**(DBOT 01)**

M.Sc. (Previous) DEGREE EXAMINATION, NOVEMBER 2021.

First Year

Botany

BIOLOGY AND DIVERSITY OF ALGAE, BRYOPHYTES, PTERIDOPHYTES AND  
GYMNOSPERMS

Time : Three hours

Maximum : 70 marks

SECTION A — (5 × 6 = 30 marks)

Answer any FIVE questions from the following.

1. Ecology of Cyanophyta
2. Pigments in Algae
3. Internal structure of Funaria
4. General characters of Bryophytes
5. Seed in Pteridophytes
6. Classification of Pteridophytes
7. Caytoniales
8. RLS and TLS

SECTION B — (4 × 10 = 40 marks)

Answer ALL questions.

9. (a) Describe the ecology and phylogenetic relations of Rhodophyta.  
Or  
(b) Describe the reproduction in Algae.
10. (a) Describe the thallus organization in Bryophytes.  
Or  
(b) Describe the reproduction and evolutionary trends in Anthocerotopsida.
11. (a) Describe the evolution of stele in Pteridophytes.  
Or  
(b) Describe the reproduction in Sphaenopsida.
12. (a) Compare and contrast the male cones of Pinus and Gnetum.  
Or  
(b) Enumerate the salient features of Bennettitales.
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**(DBOT 02)**

M.Sc. (Previous) DEGREE EXAMINATION, NOVEMBER 2021.

First Year

Botany

**SYSTEMATICS OF ANGIOSPERMS AND  
PLANT ECOLOGY**

Time : Three hours

Maximum : 70 marks

**SECTION A — (5 × 6 = 30 marks)**

Answer any FIVE questions from the following.

1. Vegetation types of Guntur district
2. De Candolle
3. Minor categories
4. Geography in relation to taxonomy
5. Food chains
6. Biological magnification
7. Control of environmental pollution
8. Additional energy sources.

9. SECTION B — (4 × 10 = 40 marks)

10. Answer ALL questions.

11. (a) Give an account of Takhtajan system of classification.

Or

(b) Compare and contrast the systems of classifications of Hutchinson and Engler and Prantl.

12. (a) What are the contributions of phytochemistry to taxonomy?

Or

(b) Describe the codes of botanical nomenclature.

13. (a) Describe the biogeochemical cycle with reference to phosphorus and sulphur.

Or

(b) Give an account of population interactions and natural regulation of populations.

14. (a) Describe the principles of plant geography.

Or

(b) Trace the evolution of present day vegetation.

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**(DBOT 03)**

M.Sc. (Previous) DEGREE EXAMINATION, NOVEMBER 2021.

First Year

Botany

CYTOLOGY, GENETICS AND PLANT BREEDING

Time : Three hours

Maximum : 70 marks

SECTION A — (5 × 6 = 30 marks)

Answer any FIVE questions from the following

1. Cell cycle
2. Centromere
3. B-chromosomes
4. Aneuploids
5. Pseudoalleles
6. Chi-square test
7. Clonal selection
8. Multiple crosses

9. SECTION B — (4 × 10 = 40 marks)

10. Answer ALL questions.

11. (a) Describe the organization of nucleolus.

Or

(b) Trace the evolution of wheat.

12. (a) Describe the structural changes in chromosomes.

Or

(b) Describe the meiosis in haploids.

13. (a) Give an account of modified dihybrid ratios.

Or

(b) Explain the role of mutations in plant breeding.

14. (a) Describe the breeding methods in rice.

Or

(b) Describe the breeding methods in maize.

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**(DBOT 04)**

M.Sc. (Previous) DEGREE EXAMINATION, NOVEMBER 2021.

First Year

Botany

**PLANT PHYSIOLOGY AND METABOLISM**

Time : Three hours

Maximum : 70 marks

**SECTION A — (5 × 6 = 30 marks)**

Answer any FIVE questions from the following.

1. Water potential
2. Macro nutrients
3. Mode of action of enzyme
4. ATP synthesis
5. Nitrogen uptake
6. Glycolipids
7. Photochemical properties of phytochrome
8. Vernalisation

9. SECTION B — (4 × 10 = 40 marks)

10. Answer ALL questions.

11. (a) Describe the water transport through xylem.

Or

(b) Describe the membrane transport proteins.

12. (a) Classify enzymes and their nomenclature.

Or

(b) Give an account of TCA cycle electron transport.

13. (a) Describe the mechanism of nitrogen fixation.

Or

(b) Describe glyoxalate cycle.

14. (a) Describe the physiological effects and mechanism of action of gibberellins.

Or

(b) Give an account of heat shock proteins.

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