(DBOT 01)

M.Sc. (Previous) DEGREE EXAMINATION, JUNE 2010.

First Year

Botany

Paper I — BIOLOGY AND DIVERSITY OF ALGAE, BRYOPHYTES, PTERIDOPHYTES AND GYMNOSPERMS

Time : Three hours Maximum : 100 marks

SECTION A — ($5 \times 8 = 40$ marks)

Answer any FIVE questions.

Each question carries 8 marks.

1. Spirulina.

2. Reproduction in Vaucheria.

3. Sporophyte of Funoria.

4. Spagnum.

5. Siphonostele.

6. Sporocarp of Azolla.

7. Endosperm in gymnosperms.

8. Classification of gymnosperms.

SECTION B — ($4 \times 15 = 60$ marks)

Answer ALL questions.

Each question carries 15 marks.

9. (a) Give an account on types of life cycles in Algae.

Or

(b) Write an essay on reproduction in chlorophyceae.

10. (a) Describe the development of antheridium and archegonium in Marchantia.

Or

(b) Give an account on classification and general characters of bryophytes.

11. (a) Discuss the stelar evolution in pteridophytes.

Or

(b) Write an account on fossil pteridophytes.

12. (a) Describe the structure and development of male and female strobili of Genetales.

Or

(b) Give an account on Medullosaceae and state their affinities with other groups.

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(DBOT 02)

M.Sc. (Previous) DEGREE EXAMINATION,
JUNE 2010.

First Year

Botany

Paper II — SYSTEMATICS OF ANGIOSPERMS AND PLANT ECOLOGY

Time : Three hours Maximum : 100 marks

SECTION A — ($5 \times 8 = 40$ marks)

Answer any FIVE questions.

Each question carries 8 marks.

1. Linnaceus system of classification.

2. Demerits in Bentham and Hooker system of classification.

3. Infraspecific categories.

4. Contributions of Anatomy to Taxonomy.

5. Energy flow.

6. Homeostasis.

7. Control of pollution.

8. Endemism.

SECTION B — (4 × 15 = 60 marks)

Answer ALL questions.

Each answer carries 15 marks.

9. (a) Compare and contrast the systems of classification of Engler and Grantl and Hutchinson.

Or

(b) Describe the vegetation types India with suitable examples.

10. (a) Give an account of International code of Botanical Nomenclature.

Or

(b) What are the contributions of cytology in resolving taxonomic disputes?

11. (a) Describe biogeochemical cycles with reference to Nitrogen.

Or

(b) Describe succession in plant communities.

12. (a) Write an essay on principles of plant geography.

Or

(b) What steps do you recommend for conservation of natural resources.

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(DBOT 03)

M.Sc. DEGREE EXAMINATION, JUNE 2010.

First Year

Botany

Paper III — CYTOLOGY, GENETICS AND PLANT BREEDING

Time : Three hours Maximum : 100 marks

SECTION A — ($5 \times 8 = 40$ marks)

Answer any FIVE questions.

1. Nucleolus.

2. Karyotype analysis.

3. Reversions.

4. Evolution of major crop studied by you.

5. Linkage major.

6. Reduced mutagenesis.

7. Hybridization.

8. Clonal selection.

SECTION B — ($4 \times 15 = 60$ marks)

Answer ALL questions.

9. (a) Describe the structure of chromosome and packing of DNA.

Or

(b) Write an essay on various banding techniques.

10. (a) Explain numerical alterations in chromosomes.

Or

(b) Give an elaborate account of allopolyploids.

11. (a) Describe chromosome mapping in eukaryotes.

Or

(b) Enumerate the salient features of cytoplasmic inheritance.

12. (a) Compare and contrast pure line and mass selections.

Or

(b) What is pedigree method and how it differs from bulk method?

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(DBOT 04)

M.Sc. (Previous) DEGREE EXAMINATION,
JUNE 2010.

First Year

Botany

Paper IV — PLANT PHYSIOLOGY AND METABOLISM

Time : Three hours Maximum : 100 marks

SECTION A — ($5 \times 8 = 40$ marks)

Answer any FIVE questions.

Each question carries 8 marks.

1. Water potential.

2. Criteria of essentiality.

3. Mechanism of enzyme action.

4. Water oxidizing complex.

5. Synthesis of amino acids.

6. Glyoxylate cycle.

7. Hormone receptors.

8. Water stress.

SECTION B — ($4 \times 15 = 60$ marks)

Answer ALL questions.

9. (a) Describe the fine structure of Stomata and explain the mechanism of Stomata opening and closing.

Or

(b) Describe the mechanism of ion uptake in plants.

10. (a) Define photophosphorylation and describe the mechanism of photosynthetic electron transport.

Or

(b) Give an account of the mechanism involved in the Pyruvic acid oxidation in aerobic respiration.

11. (a) Explain the mechanism of protein synthesis in plants.

Or

(b) How are fats degraded in plant tissues? Briefly explain the β – oxidation pathway.

12. (a) Describe the physiological role of auxins and comment on their importance in Agriculture.

Or

(b) Write a critical essay on the physiology of Flowering process in plants.

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