

**2009**  
**BOTANY - II (Optional)**

100163

Standard : Degree

Total Marks : 200

Nature : Conventional

Duration : 3 Hours

**Note :**

- (i) Answers must be written in *English* only.
- (ii) Question No. 1 is **Compulsory**. Of the remaining questions, attempt **any four** selecting one question from *each* section.
- (iii) Figures to the **RIGHT** indicate marks of the respective question.
- (iv) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
- (v) Credit will be given for orderly, concise and effective writing.
- (vi) Candidate should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he/she will be penalised.

**1. Answer any four of the following questions :**

- (a) Describe Nucleosome - solenoid model for the structure of chromatin. 10
- (b) Explain Mendel's Law of segregation. 10
- (c) Micropropagation and its advantages. 10
- (d) Discuss causes of Global warming. 10
- (e) What is power point ? Write necessary steps to create the presentation in power point. 10

**SECTION - A****2. Answer the following sub-questions :**

- (a) Write about the structure and functions of chloroplast. 20
- (b) Define Meiosis. Give various stages of meiosis - I. Write its significance. 20

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3. Answer the following sub-questions :
- (a) Describe ultrastructure of Eukaryotic cell. 20
  - (b) Explain structural variations in chromosomes and their significance. 20

**SECTION - B**

4. Answer the following sub-questions :
- (a) Explain Linkage with suitable example. 15
  - (b) Write characteristics of Genetic code. 15
  - (c) Explain - 'Survival of the fittest'. 10
5. Answer the following sub-questions :
- (a) Explain cytoplasmic inheritance with suitable example. 15
  - (b) Structure of t-RNA and its role in protein synthesis. 15
  - (c) Any two evidences of organic evolution. 10

**SECTION - C**

6. Answer the following sub-questions :
- (a) Define hybridization and explain pedigree method of hybridization. 15
  - (b) Write about somaclonal variations and their application. 15
  - (c) Normal Distribution. 10
7. Answer the following sub-questions :
- (a) Explain polyploidy with suitable examples. 15
  - (b) Define transgenic plants. How they are created ? Explain with suitable example. 15
  - (c) Probability. 10

## SECTION - D

8. Answer the following sub-questions :
- (a) Explain Photorespiration. 10
  - (b) Differentiate between short day and long day plants. 10
  - (c) What are the sources of water pollution ? 10
  - (d) Describe in-situ conservation of bio-diversity. 10
9. Answer the following sub-questions :
- (a) Write the processes involved in Nitrogen cycle. 10
  - (b) What are the applications of growth substances in agri-horticultural plants ? 10
  - (c) What are the environmental effects of deforestation ? 10
  - (d) What do you mean by endangered and endemic species ? Give examples. 10

