

ALU

2007

100104

**BOTANY - II (Optional)**

**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 the structure of Eukaryotic cell. **10**
- (b) Describe the Mendel's law of inheritance. **10**
- (c) Define plant Breeding ? Add a note on hybridization method. **10**
- (d) Define succession and describe the stages in hydrosere. **10**
- (e) Write a note on computer application in Biostatistical analysis in plant sciences. **10**

**SECTION - A**

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

- (a) Describe the ultrastructure and function of Mitochondria. **20**
- (b) What is mitosis and meiosis. Explain the various stages in mitosis. **20**

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3. Answer the following sub-questions :

- (a) Describe the ultrastructure and Functions of Nuclear. 20
- (b) Describe the structure, behaviour and significance of Polytene Chromosome. 20

#### SECTION - B

4. Answer the following sub-questions :

- (a) Define crossing over ? Explain the mechanism and theories of crossing over. 15
- (b) Explain the detailed mechanism of protein synthesis. 15
- (c) 'Describe structure and synthesis of Nucleic' acids. 10

5. Answer the following sub-questions :

- (a) What is Linkage ? Describe coupling and repulsion mechanism. 15
- (b) Define genetic code and explain regulation of gene expression. 15
- (c) What is organic evolution. Discuss various theories with respect to organic evolution. 10

#### SECTION - C

6. Answer the following sub-questions :

- (a) What is plant Breeding explain their role in agriculture. 15
- (b) Define Biotechnology. Explain its application in Agriculture and Industry. 15
- (c) Explain standard deviation and coefficient of variation. 10

7. Answer the following sub-questions :
- (a) Describe the different methods in hybridization. 15
  - (b) Explain the role of Genetic Engineering and comment on Recombinant DNA technology. 15
  - (c) Explain correlation and regression. 10

#### SECTION - D

8. Answer the following sub-questions :
- (a) Explain anaerobic and aerobic respiration. 10
  - (b) What are the growth hormones ? Explain their physiological effects for building the plants. 10
  - (c) Define Ecosystem ? Describe the components and their role in ecosystem. 10
  - (d) Define Biodiversity ? Describe assessment and conservation of Biodiversity. 10
9. Answer the following sub-questions :
- (a) Differentiate between  $C_3$   $C_4$  plants. 10
  - (b) What is photoperiodism and Flowering ? Add a note on their application. 10
  - (c) Define pollution. Give an account of water pollution, its effect and control measure. 10
  - (d) Comment on Global warming. Describe courses, impacts and preventive measures of Global warming. 10

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