

BOTANY
(Paper II)

Time Allowed : Three Hours

Maximum Marks : 300

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are EIGHT questions divided in two Sections.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, any THREE are to be attempted choosing at least ONE question from each Section.

The number of marks carried by a question/part is indicated against it.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

SECTION 'A'

1. Answer any THREE of the following in about 200 words each **20×3=60**
- (a) Evolution.
 - (b) Gametophytic apomixis.
 - (c) Pure Line Selection.
 - (d) Structure and Significance of Lampbrush Chromosomes.
2. (a) Describe in detail the physical properties of cell membrane. **30**
(b) How does the water and solutes move through the cell membrane? **30**
3. (a) What is Cytoplasmic inheritance? **10**
(b) Describe the Cytoplasmic-genetic male sterility. **20**
(c) Describe in detail the method of producing hybrid seeds using Cytoplasmic-genetic male sterility system. **30**
4. (a) What do you understand by genetic engineering? **15**
(b) Describe in detail the agrobacterium-mediated gene transfer method for producing transgenic plants. **45**

SECTION 'B'

5. Write short notes on any THREE of the following in about 200 words each: **20×3=60**
- (a) CO₂ fixation in C₄ plants
 - (b) Seed germination
 - (c) Global warming
 - (d) Conservation of biodiversity
6. (a) What do you understand by vernalization? Discuss the factors that influence vernalization. **40**
(b) Describe the practical significance of vernalization. **20**
7. (a) What do you understand by abiotic stresses? **20**
(b) Describe in detail the mechanism of salt stress on plants. **30**

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| | (c) | Describe the effect of salt stress on plant growth. | 10 |
| 8. | (a) | What do you understand by eco-system? | 10 |
| | (b) | How would you maintain an eco-system? | 50 |