

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. Write short notes on any THREE of the following in not more than 200 words, for each: **20×3=60**
- (a) Structure of mitochondria in relation to function
 - (b) Prions
 - (c) Male sterility
 - (d) Probability and distributions, with suitable illustrations.
2. (a) Describe the molecular basis of cell cycle. **30**
- (b) Describe the principles of protein biosynthesis. **30**
3. (a) Discuss the methods of gene mapping. **30**
- (b) Explain the methods of transfer of genes into plants. **30**
4. (a) Describe the methods of selection and hybridization used in plant breeding. **30**
- (b) Explain the structure and significance of lampbrush and B-chromosomes. **30**

SECTION 'B'

5. Write short notes on any THREE of the following, in not more than 200 words each: **20×3=60**
- (a) Co-enzymes
 - (b) Nitrogen cycle
 - (c) Vernalization
 - (d) Red Data Book and its relevance to plant diversity.
6. (a) Describe the components of photosynthetic electron transport, with reference to the structure of thylakoid membranes. **30**
- (b) Discuss the adaptive measures of plants in response to their exposure to water stress. **30**
7. (a) What is dormancy? Where does it occur in plants? Describe various methods of breaking dormancy. **30**
- (b) Enumerate the applications of growth hormones in agri-horticulture, while commenting on their physiological basis. **30**
8. (a) Give an account of various ecological factors that influence plant community. **30**

(b) Describe and distinguish afforestation, deforestation and social forestry.

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