

**2010**  
**BOTANY - I (Optional)**

100064

Standard : Degree

Total Marks : 200

Nature : Conventional

Duration : 3 Hours

**Note :**

- (i) Answers must be written in **English**.
- (ii) Question No. 1 is **Compulsory**. Of the remaining questions, attempt **any four** by selecting one question from **each section**.
- (iii) Figures to the **RIGHT** indicate marks of the respective question.
- (iv) Number of optional questions up to 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 orderly, concise and effective writing.
- (vi) Draw neat and clear diagrams wherever necessary.
- (vii) 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) Give positive economic importance of algae with respect to agriculture, food and industry. **10**
- (b) What are viruses ? Write on the process of multiplication in viruses. **10**
- (c) Describe and comment on the anomalous secondary growth in woody dicot. **10**
- (d) Write on the importance of Ethnobotany. **10**
- (e) Give salient features of Gnetales. **10**

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

- (a) What is life cycle ? Describe in brief four different types of life cycles in algae, giving suitable examples. **20**
- (b) With suitable illustrations, describe different methods of sexual reproduction in fungi and add a note on Parasexuality. **20**

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Marks

3. Answer the following sub-questions :-
- (a) Write on origin and the evolution of sex in algae. **20**
- (b) Describe in brief the life history of *Puccinia Graminis*. **20**

## SECTION - B

4. Answer the following sub-questions:-
- (a) Write about vegetative reproduction in bryophytes. **10**
- (b) Give salient features of Lycopsidea. **10**
- (c) Describe the structure of typical bacterial cells. **10**
- (d) Write on different structural defense mechanisms of plants, adopted against pathogens, before infection. **10**
5. Answer the following sub-questions:-
- (a) Describe the sporophyte of *Marchantia*. **10**
- (b) Give an account of structure and functions of sex-organs in pteridophyte. **10**
- (c) Write on the role of microbes in controlling air pollution. **10**
- (d) Different control measures used against the plant diseases caused by nematodes. **10**

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## SECTION - C

6. Answer the following sub-questions:-
- (a) Write on general features of Gymnosperms. **10**
- (b) Define taxonomy. Write on the contributions of cytology, photochemistry and taximetrics to taxonomy. **15**
- (c) Describe the structure of stomatal apparatus and write on different types of stomata, giving suitable examples. **15**
7. Answer the following sub-questions:-
- (a) What are Gymnosperms ? Write on the classification of the group. **10**
- (b) Compare characters of families- Brassicaceae and Malvaceae, giving suitable examples. **15**
- (c) Define pollination. Write the salient features of cross pollination and add a note on its significance. **15**

## SECTION - D

8. Answers the following sub-questions:-

- (a) Explain the technique of 'carbon dating'. Mention its applications in oil exploration. 10
- (b) What are Fibres ? Enlist at least *Five* botanical sources of plant fibres. Write about the nature, structure and uses of fibres. 15
- (c) What are petrocrops and biofuels ? Write about the role of petrocrops and biofuels in overcoming the energy crisis. 15

9. Answer the following sub-questions:-

- (a) Give general account of the group 'Cordiatales'. 10
- (b) Enlist at least *Three* botanical sources of each of Gum, resins and dyes, mentioning their uses and nature in details. 15
- (c) What are herbaria ? Enlist *Five* major herbaria in world and India and add a note on their importance. 15

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