

(c) Xerophytes and Hydrophytes

(d) Etiolation and de-etiolation

4. (a) Explain the seed dispersal methods in plants. (7)
- (b) What is parasitic plant? Explain by giving at least two examples. Discuss various adaptive features and mode of nutrition in parasitic plants. (8)
5. (a) What is mycorrhizal association? Explain the structural features and roles of mycorrhiza. (8)
- (b) Explain the mechanism and types of pollination in plants. (7)
6. (a) Describe the role of Plasmodesmata in plant cell communication. (7)
- (b) Explain the structure and functions of root cap with labelled diagram. (8)

[This question paper contains 4 printed pages.]

**Your Roll No.....**

**Sr. No. of Question Paper : 5303**

**J**

Unique Paper Code : 2164001202

Name of the Paper : Intelligent Systems in Plants

Name of the Course : **Common Prog. Group – GE**

Semester : VI

Duration : 2 Hours

Maximum Marks : 60

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **four** questions in all, including Question No.1 which is compulsory.
3. **All** questions carry equal marks.
4. **All** parts of a question must be answered together.

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1. (a) Define the following (any five) : (1×5=5)

- (i) Geotropism
- (ii) Phototropism
- (iii) Etioplast
- (iv) Skotomorphogenesis
- (v) Xenogamy
- (vi) Chiropterophily

(b) Match the following : (1×5=5)

- |                          |                                                         |
|--------------------------|---------------------------------------------------------|
| (i) Venus Fly trap       | a) Cytokinin                                            |
| (ii) Zeatin              | b) PGPR                                                 |
| (iii) <i>Azotobacter</i> | c) Insectivorous plant                                  |
| (iv) J. C. Bose          | d) Vascular bundle                                      |
| (v) Xylem and phloem     | e) Demonstrated the plants response to external stimuli |

(c) Fill in the blanks : (1×5=5)

- (a) \_\_\_\_\_ phytohormone is responsible for stomatal closure.

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(b) The root tip is covered by a \_\_\_\_\_ sheath, which lubricates the root during its passage through the soil.

(c) The divalent ion present in the photosynthetic pigment is \_\_\_\_\_.

(d) \_\_\_\_\_ cells help in thigmotropic movement in *Mimosa pudica*.

(e) Bulliform cells are present in the leaves of \_\_\_\_\_ plants.

2. Write short note on the following (Any three) : (3×5=15)

- (a) Secondary Metabolite
- (b) Leaf Morphology and anatomy
- (c) Phytohormones
- (d) Trichomes
- (e) Plant signaling receptors

3. Differentiate between the following (any three) : (3×5=15)

- (a) Apoplastic and Symplastic communication
- (b) Prokaryotic and Eukaryotic cell

P.T.O.