

- (i) Ernst Munch
- (ii) Hugo De Vries
- (iii) Garner and Allard
- (iv) H.A. Borthwick
- (v) Darwin
- (vi) Paul. J. Kramer
- (vii) F.W. Went
- (viii) D.S. Letham

(b) Discuss the morphological and anatomical adaptations of Hydrophytes with labelled Diagram.

(8)

5. (a) Explain the transport of food and water in plants.

(8)

(b) Describe various types of tropic movements with examples.

(7)

6. (a) Explain the mechanical and chemical defence against predators with special reference to secondary metabolites.

(8)

(b) Explain the mechanisms by which plants recognize themselves, their neighbors, and their relatives. How do these recognition processes affect plant growth, competition, and cooperation within a plant community?

(7)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5042

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.

1. (a) Define the following (**Any Five**) (1×5=5)

(i) Malacophily

(ii) Osmosis

(iii) Secondary metabolites

(iv) Gibberellins

P.T.O.

(v) Plant Intelligence

(vi) Trichome

(vii) Plant Thermogenesis

(b) Fill in the blanks (**Any five**) (1×5=5)

(i) If a cell is placed in an isotonic solution, it becomes _____

(ii) The transfer of pollen grains on stigma of same flower is known as _____

(iii) The channels that perforate plant cell walls are known as _____

(iv) Succulents are commonly found in _____ Regions.

(v) The protective structure covering the shoot apex is known as _____

(vi) Carnivorous plants thrive in _____ deficient soil.

(c) Name the following (**Any five**) (1×5=5)

(i) Ions that act as second messenger in signal transduction.

(ii) Pigment responsible for the perception of blue light.

(iii) Plant produces ethylene in response to stresses such as.

(iv) An example of a plant that uses bats for pollination.

(v) The metal constituent of chlorophyll is.

(vi) The specialized motor tissue in plant leaves responsible for movement.

2. Differentiate between the following (**Any five**) (5×3=15)

(i) Phototropism and Geotropism

(ii) Parenchyma and Sclerenchyma

(iii) Water and Heat stress

(iv) Ectomycorrhiza and Endomycorrhiza

(v) Active absorption of water and Passive absorption of water

(vi) Parasitic and Insectivorous plant

3. Write short notes on following (**Any three**) (3×5=15)

(i) Cytoplasmic streaming

(ii) Seismonastic movements in *Mimosa pudica*

(iii) Cell signalling mechanism in plants

(iv) Phytochrome

(v) Xerophytic adaptation

4. (a) Give one contribution of the following scientists (**Any seven**) (7×1=7)