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5 SEM TDC BOTH (CBCS) C 12

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(Nov/Dec)

BOTANY

(Core)

Paper : C-12

(Plant Physiology)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. (a) Choose the correct answer of the following : 1×3=3

(i) Casparian strips are found in epidermal cells/cortical cells/pericycle/endodermal cells of roots of plants.

(ii) Cohesive force of water is due to presence of hydrogen bonds between water molecules/covalent bonds between water molecules/hydrogen bonds between water and components of xylem walls/None of these.

(2)

(iii) Which of the following is supposed to be precursor of florigen? Auxin/ Gibberellin/Cytokinin/All of these.

(b) Fill in the blanks : $1 \times 2 = 2$

(i) Avena-Curvature test for bioassay was developed by _____.

(ii) Osmotic pressure of pure water is _____.

2. What is ascent of sap? Explain in detail the transpiration pull and cohesion of water theory of ascent of sap. Cite some evidences in support of this theory. $2+7+3=12$

Or

What is Donnan's equilibrium? Describe the principles involved in the mechanism of absorption of mineral salts by plants. $3+9=12$

3. What are the trace elements? Write the general functions of essential elements in plants. How will you determine the essentiality of a particular mineral element for the normal growth and development of the plants? $3+7+2=12$

(3)

Or

Write explanatory notes on the following :

$6+6=12$

- (a) Active absorption of water by plants
- (b) High irradiance response (HIR)

4. Define tropic movement in plants. Explain with examples the different types of tropic movement in plants. $2+10=12$

Or

Write briefly on the following : $4 \times 3 = 12$

- (a) Vernalization
- (b) Significance of osmosis
- (c) Guttation

5. What are gibberellins? How are they synthesized in plants? Describe the role of gibberellins in plants. $2+5+5=12$

Or

Write explanatory notes on the following :

$6+6=12$

- (a) Role of phytochrome in photomorphogenesis
- (b) Loading and unloading in phloem transport
