

Total No. of Printed Pages—3

**5 SEM TDC BOTH (CBCS) C 12**

**2 0 2 2**

( 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 :

4×3=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

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