5 SEM TDC BOTH (CBCS) C 12

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(Held in January/February, 2022)

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) Transpiration is minimized by the deposition of cellulose / pectin / cutin / mucilage.

   (ii) The example of a selective permeable membrane is cell wall / chloroplast membrane / plasma membrane / mitochondrial membrane.

(Turn Over)

(iii) The direction and rate of water movement from cell to cell is based on WP / TP / DPD / plasmolysis.

(b) Fill in the blanks : 1×2=2

(i) Loss of water droplets from the outer surface in any part of the plant body is called _____.

(ii) The movement of plants influenced by light is called _____.

2. What is transpiration? Write about the mechanism of opening and closing of stomata. How do plants adapt itself to check excessive transpiration? 2+8+2=12

Or

What do you mean by mineral nutrition? Mention the function and deficiency symptoms of nitrogen, potassium and phosphorus in the plants. 2+10=12

3. Explain the evidence which proves that phloem is the channel of transport of organic substances in plants. Describe the 'mass flow hypothesis' of translocation of solutes in plants. Give its demerits. 4+6+2=12

Or

Write explanatory notes on the following : 6+6=12

(a) Seismonastic movements in plants

(b) Active absorption of ions by plants

4. What are phytohormones? Describe bioassay and physiological role of auxin. 1+6+5=12

Or

Write briefly on the following : 4×3=12

(a) Water potential

(b) Antitranspirants

(c) Low energy response (LER) of phytochrome

5. What do you mean by phytochrome? Give its chemical nature and role in flower initiation. How do the two forms of phytochrome regulate the flowering mechanism? 2+2+8=12

Or

What is seed dormancy? Mention the types of dormancy. Write the causes of seed dormancy and explain the mechanism of breaking of seed dormancy. 1+1+5+5=12

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