Total No. of Printed Pages—4

5 SEM TDC BOTH (CBCS) C 12

2023

(November)

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) Which of the following forms of soil water is commonly absorbed by plants?

(1) Capillary water

(2) Combined water

(3) Hygroscopic water

(4) Gravitational water

(ii) Which of the following is a chelating agent?

(1) 2,4-D

(2) 2,4,5-T

(3) DTPA

(4) $MgSO_4$

(iii) The sieve tubes contain several types of fibrillar proteins called

(1) G-proteins

(2) S-proteins

(3) P-proteins

(4) X-proteins

(b) Fill in the blanks : 1×2=2

(i) Chemically kinetin is _____.

(ii) The term 'vernalization' was coined by _____.

2. Write short notes on the following : 3×4=12

(a) Water potential

(b) Physiological role of potassium in plants

(c) Florigen

(d) Siderophores

3. What is transpiration? Write about the mechanism of opening and closing of stomata. How do plants adapt itself to check excessive transpiration? 2+6+4=12

Or

Explain the evidence which proves that phloem is the channel of transport of organic substances in plants. Describe the 'pressure-flow' model of translocation of solutes in plants. 5+7=12

4. What is photoperiodism? Describe the different types of plants in response to photoperiod. What role does phytochrome play in flower initiation? 2+6+4=12

Or

Write explanatory notes on the following : 6×2=12

(a) Role of phytochrome in photomorphogenesis

(b) Causes of seed dormancy

5. What are phytohormones? Describe biosynthesis and physiological role of auxin in plants. 2+5+5=12

Or

Write explanatory notes on the following : 6×2=12

(a) Carrier hypothesis of salt uptake

(b) Passive absorption of water by plants

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