Total No. of Printed Pages—3

5 SEM TDC BOTH (CBCS) C 12

2024

(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) The flow of water from one cell to another is governed by

(1) osmotic pressure

(2) diffusion

(3) diffusion pressure deficit (DPD)

(4) osmosis

(ii) Stomatal closing is affected by

(1) kinetic acid

(2) abscisic acid

(3) gibberellic acid

(4) IAA

(iii) Phloem loading and unloading occur in higher plants through

(1) apoplastic pathway

(2) symplastic pathway

(3) Both (1) and (2)

(4) None of the above

(b) Fill in the blanks : 1×2=2

(i) Type of movement shown by tendril is called _____.

(ii) The term vernalization was coined by _____.

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

(a) Aquaporins

(b) Facilitated diffusion

(c) P_r and P_{fr}

(d) Vernalization

(Continued)

3. What is ascent of sap? What are the various theories proposed for the ascent of sap? Explain in detail the transpiration pull and cohesion of water theory of ascent of sap. 2+3+7=12

Or

What do you understand by active salt absorption? Explain the mechanism of active absorption of salt by plants. 2+10=12

4. What are the major elements in plant nutrition? Explain the role of any three of them and write how their deficiency affects the plant growth. 2+10=12

Or

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

(a) Mass flow hypothesis

(b) High irradiance response (HIR)

5. Define seed dormancy. What are the possible causes which lead to the development of seed dormancy? What methods are employed to break it? 1+6+5=12

Or

What are cytokinins? Describe the occurrence and physiological effects of cytokinins in plants. 1+3+8=12

★ ★ ★