Total number of printed pages-02

3(Sem-8/FYUGP)BNC(A)/DSCI

2025

BOTANY

(Discipline Specific Core)

Paper Name: Plant Physiology

Paper Code: **BOT-DSC-244**

Full Marks: 45

Time: Two Hours

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

1. Choose the correct answer of the following: 1x4=4

(a) Cohesion tension theory was proposed by-

i) Dixon and Jolly ii) Boehm

iii) Sach iv) E. Munch

(b) According to fluid mosaic model, the cell membrane is-

i) Lipid monolayer ii) Lipid bilayer

iii) Lipid trilayer iv) Non-lipid

(c) "Mass flow hypothesis" is related to which part of plants-

i) Xylem ii) Phloem

iii) Both (i) & (ii) iv) None

(d) A gaseous plant growth regulator is-

i) Ethylene ii) Abscisic acid

iii) Gibberellin iv) Cytokinin

2. Write short notes on the following: (Any three) 2x3=6

(a) Photoperiodism.

(b) Significance of stress hormones in plants.

(c) Physiological effects of Ethylene

(d) Macronutrients.

3. Answer the following questions: (Any three) 5x3=15

(a) What is Vernalization ? Mention its significance.

(b) Explain why Xylem translocation is unidirectional and Phloem translocation is bidirectional.

(c) Write shortly about ion flux, uniport, symport, antiport and co-transport.

(d) Discuss the "Source sink relationship" in Phloem translocation of food materials in plants.

(e) Write about the physiological response of draught stress on plants.

4. Answer the following questions: (Any two) 10x2=20

(a) Discuss about the discovery, chemical nature, and physiological role of Auxin. 10

(b) What is Seed dormancy ? What are its causes ? Explain the mechanisms to break Seed dormancy. 2+2+6=10

(c) Describe the starch sugar hypothesis and K^+ pump theory of stomatal movement. 5+5=10

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