

(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2025 ONLY)

25PBY206

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI
END-OF-SEMESTER EXAMINATIONS :APRIL - 2026
M.Sc.-BOTANY **MAXIMUM MARKS: 75**
SEMESTER: II **TIME : 3 HOURS**

PLANT PHYSIOLOGY

SECTION – A (10 X 1 = 10MARKS)

ANSWER THE FOLLOWING QUESTIONS. K1
MULTIPLE CHOICE QUESTIONS.

1. Water movement between cells is due to_____
a) T.P b) W.P. c) D.P.D. d) incipient plasmolysis.
2. Which one is an essential mineral, not constituent of any enzyme but stimulates the activity of many enzymes_____
a) Zn b) Mn c) K d) Mg
3. Photosynthetic pigments found in the chloroplasts occur in_____
a) thylakoid membranes b) plastoglobules c) matrix d) chloroplast envelope.
4. The substrate for photorespiration is_____
a) phosphoglyceric acid b) glycolate c) serine d) glycine
5. Phototropic and geotropic movements are linked to_____
a) gibberellins b) enzymes c) auxin d) cytokinins

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES. K2

6. Differentiate osmosis and diffusion.
7. Trace the importance of micro elements in plant metabolism.
8. What is the electron transport pathway in the chloroplast membrane?
9. Distinguish between aerobic and anaerobic respiration.
10. How is florigen transported?

SECTION – B (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.K3

11. a) Find out the methods of water potential in plants.
(OR)
b) Elaborate the importance of water and chemical potential in plants
- 12.a) How do G protein coupled receptors receive cell signals and start transduction?
(OR)
b) Analyze uptake and transport of nutrients in plants

(CONTD 2)

- 13.a) Outline the schematic representation of C₃ cycle.
(OR)
b) Determine role of accessory pigments and carotenoids in photosynthesis
- 14.a) Write the nitrogen cycle.
(OR)
b) Compute the schematic representation of glycolysis. Add notes on its importance.
- 15.a) Discuss the physiology behind vernalisation
(OR)
b) Correlate photoperiodism and phytochrome action in flowering plants

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.****(K4 (Or) K5)**

16. a) Classify the types of transpiration. Mention its significance.
(OR)
b) How does energy dependent process of phloem loading take place?
- 17.a) Analyze the relationship between calcium and protein in plant metabolism.
(OR)
b) Why are macronutrients and micronutrients essential for plants? – Discuss in detail
18. a) Describe the structure and function of Photosystem I and II
(OR)
b) Compare C₃ and C₄ CO₂ fixation process in plants
- 19.a) Illustrate the TCA cycle and its regulation.
(OR)
b) Assess the mechanism of symbiotic and non-symbiotic nitrogen fixation
- 20.a) Infer the factors regulating seed germination. Why is seed germination important?
(OR)
b) Focus the various physiological adaptations of the plants which enable plants to tolerate drought, cold and salinity stress.
