

5 MJ 60313

FOUR YEAR B.Sc. (HONOURS) DEGREE EXAMINATION,
NOVEMBER/DECEMBER 2025

FIFTH SEMESTER

Paper – XIII

Botany

Paper 13 – PLANT PHYSIOLOGY AND METABOLISM

(w.e.f. 2023-24 Regulations)

Time : Three hours

Maximum : 70 marks

(No additional sheet will be supplied)

PART A — (5 × 4 = 20 marks)

Answer any FIVE questions

1. Water potential
2. Ascent of sap
3. Mechanism of enzyme action,
4. Krebs cycle
5. Photosynthetic pigments
6. C₄ pathway
7. Symbiotic nitrogen fixing organisms
8. Saturated fatty acids
9. Gibberellins
10. Photoperiodism

PART B — (5 × 10 = 50 marks)

Answer ALL the following the questions.

11. Describe the importance of water to plant life and physical properties of water.
Or
12. Give a note on stomata structure and mechanism of stomatal movements.
13. Explain about essential macro and micro mineral nutrients and their role in plants.
Or
14. Write about Pentose Phosphate Pathway.

15. Describe the concept of two photosystems.

Or

16. Describe the process and significance of photorespiration (C₂ pathway) in plants.

17. Give a detailed note on anabolism of triglycerides.

Or

18. Describe the biochemical reactions and significance of the Glyoxylate cycle in plants.

19. Define growth. Describe its phases and kinetics of growth.

Or

20. Describe the physiological effects of Plant Growth Regulators, specifically auxins and abscisic acid, on plant growth and development.