
(DBOT 04)

M.Sc. (Previous) DEGREE EXAMINATION, DECEMBER 2008.

First Year

Botany

Paper IV — PLANT PHYSIOLOGY AND METABOLISM

Time : Three hours

Maximum : 100 marks

SECTION A — (5 × 8 = 40 marks)

Answer any FIVE questions.

Each question carries 8 marks.

1. Plant cell water potential.
2. Structure and function of guard cells.
3. Mechanism of enzyme action.
4. Oxidative electron transport.
5. Biosynthesis of amino acids.
6. β -oxidation.
7. Physiological effect of ABA.
8. Heat shock proteins.

SECTION B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

9. (a) Explain the cohesion — tension theory and its application in water transport through xylem in plants.

Or

- (b) What are membrane transport proteins? Describe their role in the transport of inorganic nutrients using suitable examples.

10. (a) What is photorespiration? Describe its pathway and significance.

Or

- (b) Describe pentose phosphate pathway and its importance.

11. (a) Describe the mechanism of protein synthesis.

Or

(b) What are fatty acids? Describe their biosynthesis in plants.

12. (a) What is phytochrome? Give an account of phytochrome induced plant responses.

Or

(b) Describe the physiological effects and mechanism of action of auxins in higher plants.
