

Paper IV — PLANT PHYSIOLOGY AND METABOLISM**Time : Three hours****Maximum : 100 marks****SECTION A — (5 × 8 = 40 marks)****Write critical notes on any FIVE of the following.****Each question carries 8 marks.**

37. Components of water potential of a plant cell.
38. Criteria of essentiality of inorganic nutrients for plants.
39. CAM pathway.
40. Photo respiration.
41. Classification of proteins.
42. Biosynthesis of fatty acids.
43. Molecular modes of ethylene action.
44. Phytochrome induced plant responses.

SECTION B — (4 × 15 = 60 marks)**Answer ALL questions.****Each question carries 15 marks.**

45. (a) Explain the process of water transport in plant based on cohesion-tension theory.

Or

9. (b) What are micro nutrients? Describe their mechanism of transport in plants.

46. (a) Describe the mechanisms of electron and proton transport in thylakoids.

Or

10. (b) Describe pentose phosphate pathway and discuss its significance.

47. (a) Give a detailed account of biological nitrogen fixation.

Or

11. (b) What are lipids? Give an account of their classification and functions in plants.

48. (a) Describe in detail plant responses to water stress.

Or

12. (b) Explain the mode of signal transduction process in plants.
