

A-0018

Total Pages : 4

Roll No.

MSCBOT-601

M.Sc. BOTANY (MSCBOT)

(Plant Physiology and Biochemistry)

3rd Semester Examination, Session December 2024

Time : 2:00 Hrs.

Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.***

Section-A

(Long Answer Type Questions) 2×19=38

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

1. Explain in detail the function of light harvesting complex and the mechanism of photolysis of water.
2. Write detail note on the following :
 - (a) Calvin-Benson pathway
 - (b) Hatch-slack pathway
3. Describe the chemical nature, mechanism of action and properties of enzymes.
4. Write down explanatory note on any *two* of the following :
 - (a) Drought resistance in plants.
 - (b) Importance of leghaemoglobin.
 - (c) Munch hypothesis of phloem transport.
5. Discuss the role of the following :
 - (a) Cytokinin in leaf senescence.
 - (b) Auxin in apical dominance.
 - (c) Absciscic acid in abscission.

Section–B

(Short Answer Type Questions) 4×8=32

Note :– Section ‘B’ contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Explain the relation between osmotic pressure, turgor pressure and suction pressure.
2. What are essential minerals required by plants ? Explain the role of phosphorus and potassium in plant nutrition.
3. Write short note on any *two* of the following :
 - (a) Primary structure of protein.
 - (b) Michaelis-Menten constant.
 - (c) C₄ Plants.
4. Where are the following enzymes located in plant cell ? In what process do they participate ? Succinate dehydrogenase, aldolase, pyruvate dehydrogenase and ribulose biphosphate carboxylase.

5. Mention briefly the structural features of open chain and ring forms of monosaccharides found in plants.
6. What is photorespiration ? Give the mechanism and significance of this process.
7. Differentiate between any *two* of the following :
 - (a) Action spectrum and absorption spectrum.
 - (b) Coenzymes and cofactors.
 - (c) Active site and allosteric site.
8. Describe the phenomenon of vernalisation in higher plants with its importance.
