

GSQ/M21

1758

BIOCHEMISTRY AND PLANT BIOTECHNOLOGY**Paper-I****Time allowed : 3 Hours****Maximum Marks : 40**

Note : Attempt **five** questions in all, Question No. **1** is compulsory. Attempt **two** question from each unit. All questions carry equal marks.

Compulsory Question

1. Attempt all questions : 1×8 = 8
- (i) Define Isoenzyme.
 - (ii) What are Lectins?
 - (iii) How will you distinguish between L-form and D-form of amino acid?
 - (iv) Give the full form of IPA, IAA, IBA, 2,4,-D.
 - (v) How many Acetyl Co~A molecules are required for the synthesis of one molecule of Palmitate?
 - (vi) Define totipotency of a cell and name the scientist who coined this term.
 - (vii) What are Cosnids?
 - (viii) What is Cryopreservation?

UNIT-I

2. Write short notes on :
- (i) Inhibition of enzymes by poisons. 2½
 - (ii) Mode of enzyme actions. 2½
 - (iii) Mechanism of action of enzyme 3
3. (i) Define Auxins. With the help of suitable diagrams chalk out the discovery of Auxins. 4
- (ii) Enumerate the various physiological effects of Auxins. 4
4. Write notes on :
- (i) Abscisic Acid. 3
 - (ii) Physiological effects of Ethylene. 2
 - (iii) Bioassay for Auxin, Gibberellins and Cytokinins. 3

5. (i) Explain the β -oxidation of Fatty Acid degradation in plants. 5
(ii) Glyoxylate Cycle - explain briefly. 3

UNIT-II

6. Explain symbiotic nitrogen fixation in Leguminous plants. 8
7. Differentiate between :
- (i) Nitrification and Ammonification. 2½
(ii) Reductive Anination and Transanination 3
(iii) Batch and continuous culture. 2½
8. (i) Explain protoplasmic fusion and somatic hybridization. 4
(ii) Define transgenic plants. Explain the Direct Gene Transfer technique in plants. 4
9. Describe the different sources from which DNA is obtained for cloning and their selective amplification. 4+4 = 8