

Roll No.

Total Pages : 03

GSQ/M-20

1758

BOTANY

Paper I

Biochemistry and Plant Biotechnology

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory.
Attempt *two* questions from each Unit. All questions
carry equal marks.

Compulsory Question

1. (a) Define Zymogens. **1×8**
(b) What is Transamination ?
(c) Name the enzyme involved in biological nitrogen fixation and the *two* mineral elements needed for the activity of enzyme.
(d) Name the amino acid from which auxins (IAA) are synthesized.
(e) Define β -oxidation.
(f) Define nutrient medium.
(g) What is a chromosome map ?
(h) Define Passenger DNA.

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1

Unit I

2. Who coined the term enzyme ? Briefly explain the structure, composition and properties of enzyme. **8**
3. (a) Define photohormones. Discuss the discovery and physiological effects of Gibberellins. **4**
(b) Conversion of fats to sucrose. **4**
4. (a) Biosynthesis of Auxins (IAA). **4**
(b) Abscisic Acid. **4**
5. (a) Explain the biosynthesis of triglycerols in higher plants. **5**
(b) α -oxidation of Fatty Acid degradation in plants. **3**

Unit II

6. (a) Briefly explain the nitrate assimilation in plants. **2**
(b) Cell suspension culture. **3**
(c) cDNA library. **3**
7. Write short notes on the following :
(a) Nitrogenase **3**
(b) Nitrogen cycle **3**
(c) Associative symbiotic nitrogen fixation. **2**

8. Discuss briefly the following :
- (a) Restriction Endonuclease 2½
 - (b) Bacteriophage as vectors 3
 - (c) Vector mediated gene transfer technique in plants. 2½
9. (a) Discuss the various methods of sterilization for tissue culture. 4
- (b) Protoplast culture. 4