

Roll No.

Total Pages : 03

GSE/D-21
BIOTECHNOLOGY
Paper II
Biochemistry-I

814

Time : Three Hours]

[Maximum Marks : 40

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

1. Define the following in 1 to 2 lines : **1×8=8**
- (a) Epimers
 - (b) Reducing sugar
 - (c) Non-covalent bond
 - (d) Iodine value
 - (e) Native protien
 - (f) Essential amino acid
 - (g) Rancidity
 - (h) Cot value.

Unit I

2. (a) Enlist various functions carbohydrates play in biological system. Give examples. **4**

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- (b) Write structures and functions of storage polysaccharides of plants and animals. 4
3. (a) Give structures and functions of cellulose, chitin and mucopolysaccharides. How are their structures related to the functions they perform ? 4
- (b) Draw the structures of the following : 4
- (i) Sucrose
 - (ii) Lactose
 - (iii) Verbascose
 - (iv) Glutathione.
4. (a) Draw the structures of the following : 4
- (i) An amino acid with imidazole ring
 - (ii) An amino acid with polar aromatic side chain
 - (iii) An amino acid with indole ring
 - (iv) An amino acid with nonpolar branched side chain.
- (b) What is Zwitter ion ? Explain the acid-base behaviour of amino acids. 4

Unit II

5. (a) Draw a well labelled diagram depicting the forces stabilizing tertiary structure of proteins with a suitable example. 4

- (b) Write the chemical reactions used in amino acid analysis by Sanger's method and Edmann's degradation of polypeptides. 4
6. (a) Define acid value and iodine value of fats. How these observations help in characteristics of fat samples ? 4
- (b) Differentiate between glycolipids and phospholipids for their structures and functions. Give suitable examples. 4
7. (a) Compare various types of RNA for the structural characteristics and functions. 4
- (b) Draw structure and describe the biological functions of different forms of flavin adenine dinucleotide. 4