

4523

4

- (b) Explain mechanism of enzyme action by covalent modification. (4)
3. (a) Give an account on structure and function of any two storage and structural polysaccharides. (8)
- (b) Define isomerism and explain with reference to monosaccharides. (4)
4. (a) Explain the protein Structure given by Linus Pauling. What are the types of interactions that holds together the secondary and Tertiary structure of proteins? (10)
- (b) Why does a denatured protein no longer function? (2)
5. What are simple and complex lipids? Give their detailed classification with structures and functions. (12)
6. Write short notes on following (**any three**): (4×3=12)
- (a) Hypo- and Hyper-chromicity of DNA
- (b) Protein Folding theory
- (c) Disaccharides
- (d) Regulation of allosteric enzymes

(1000)



[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4523

G

Unique Paper Code : 32231303

Name of the Paper : Fundamental of Biochemistry

Name of the Course : **B.Sc. (Hons.) Zoology (LOCF)**

Semester : III

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **FOUR** questions in all.
3. Question No. 1 is compulsory.

1. (i) Define the following (**any six**): (6)

- (a) Isoelectric point
- (b) Cofactors
- (c) K_{cat}/K_m
- (d) Ampholytes
- (e) Chiral carbon

P.T.O.

4523

2

(f) Cerebrosides

(g) Molecular Chaperons

(ii) Differentiate between the following (**any six**) :

(2×6=12)

(a) Phospholipid and Glycolipid

(b) Amylose and amylopectin

(c) Competitive and Non-competitive Inhibition

(d) Reducing and non-reducing sugar

(e) Glycosidic and Peptide bond

(f) Phi-angle and Psi-angle

(g) Globular and Fibrous protein

(iii) Write structure for the following (**any three**) :

(1×3=3)

(a) An aromatic amino acid

(b) Deoxyribose

(c) Glycerol

(d) Guanine

(e) β -D Fructofuranose

4523

3

(iv) Write the contribution of following scientists:

(1×3=3)

(a) Daniel E. Koshland

(b) Christian B. Anfinsen

(c) Max F. Perutz

(v) State whether True or False : (0.5×6=3)

(a) Oleic acid is an example of monounsaturated fatty acid.

(b) Unsaturated fats have double bond in the carbon chain of their fatty acid.

(c) An equimolar concentration of D and L-alanine rotates the plane of polarized light.

(d) Allosteric enzymes are oligomeric and follow Michaelis-Menten equation.

(e) Histidine is an aromatic amino acid.

(f) Sphingomyelin is a membrane lipid that contains an amide bond.

2. (a) Derive Michaelis Menten equation, plot a Graph and Explain concept of change in Velocity and V_{max} , under different condition $S \ll K_m$, $S \gg K_m$, and $S = K_m$. (8)

P.T.O.