



Seat No. : _____

TB-116

April-2013

M.Sc. Sem. IV

509-CHEO Chemistry (Organic)

(Bioorganic Chemistry)

Time : 3 Hours]

[Max. Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) Figures to right indicate full marks.

1. Answer the following :

- (a) Giving example discuss the interaction of water on the structure of biomolecules. 7

OR

What is buffering ? Discuss Henderson-Hasselbalch equation to check behaviour of weak acid and buffers.

- (b) Discuss absorption, transport, mobilization and biochemical function of Vitamin-A. 7

OR

Discuss absorption, transport, mobilization and biochemical function of Vitamin-H.

2. Answer the following :

- (a) What are peptides ? How they are classified ? Discuss any one N-terminal amino acid determination method with its significance. 7

OR

What are enzymes ? Classify them. Giving diagram, discuss activation energy with reference to catalyst.

- (b) What is enzyme inhibition ? Give an account of reversible enzyme inhibition giving suitable example. 7

OR

What is active site of enzyme ? Give a brief account on Enzymatic reaction of Lysozyme.

3. Answer the following :

- (a) Give complete classification of carbohydrate and its general nomenclature. 7

OR

Giving suitable evidences distinguish 1, 4 and 1, 6 linkage in carbohydrates.

- (b) Give an account of structure, function and nomenclature of nucleotides. 7

OR

Describe the structure of DNA and its replication.

4. Answer the following :

- (a) What are lipids ? Give classification of lipids giving example of each class. 7

OR

Give biosynthesis of fatty acid.

- (b) Give a brief account on the biological function of phospholipids and bile acids. 7

OR

Give an account to check purity of fats and oils with at least five parameters.

5. Answer the following : 14

- (1) Giving examples define vitamins.
- (2) Give the name and structure of at least two Vitamin B complexes.
- (3) Show how 1-ascorbic acid is converted to Diketo glutaric acid and show its biological function.
- (4) How L (+) lactic acid is converted to L(+) alanine.
- (5) Give rules for nomenclature of enzyme.
- (6) How adenosine deaminase is converted to inosine ?
- (7) Define Mutarotation.
- (8) What is induced dipole moment ?
- (9) Giving reaction show the conversion of NAD⁺ to NADH.
- (10) What are reducing and Non-reducing sugars ?
- (11) What is the function of messenger RNA ?
- (12) What are glycolipids and glycoproteins ?
- (13) Write structural formula of cis 9-hexadecanoic acid 16:1:9
- (14) Give functions of essential fatty acids.