(f) What is complex lipids ? Give an examples. 5

(g) Oxidation of Even-chain saturated fatty acids. 5

(h) Biological role of Glyco and lipoprotein. 5

5. Describe in detail protein folding. and its biophysical and cellular aspects.

OR

What is meant by protein-ligand interaction ? Explain any one physical and chemical method used for study of protein-ligand interaction. 20

AQ – 856

First Semester M. Sc. Biotechnology Examination

MACROMOLECULES AND ENZYMOLOGY

Paper – II

(1BTB-2/BT-102)

P. Pages : 4

Time : Three Hours] [Max. Marks : 100

Note : (1) All questions are compulsory and carry equal marks.
(2) Draw well labelled diagram and give suitable examples wherever necessary.

1. Describe in detail oxidative phorphorylation process and explain its different inhibitors classes with suitable examples.

OR

Explain fundamental laws of thermodynamics. Describe relationship between standard free energy change and equilibrium constant. 20

2. Explain the following :—

(a) Classification of protein based on biological function. 5

(b) Types of chemical bonds involved in protein structure. 5

(c) Ramachandran plot. 5

(d) Physio-chemical properties of amino acids. 5

OR

(e) Role of peptide bond in biological system. 5

(f) Different molecules derived from amino acids, explain with suitable examples atleast any five. 5

(g) Collagen is the most abundant protein of mammals. 5

(h) Classification of amino acids based on the number of amino and carboxylic groups. 5

3. Explain the following :-

(a) Biological role of ribozymes. 5

(b) Mechanism of kinetic behaviour of Allosteric enzyme. 5

(c) Three types of reversible enzyme inhibition. 5

(d) Significance of k_m and V_m values. 5

OR

(e) What are enzyme inhibitors ? Explain with some suitable examples. 5

(f) Comparison between negative and positive co-operativity of enzyme kinetics. 5

(g) Significance of abzymes. 5

(h) Formation of an enzyme-substrate complex according to Fischer's lock and key model. 5

4. Describe in brief :—

(a) Physiochemical properties of polysaccharides. 5

(b) Reaction steps of the TCA cycle. 5

(c) Phospholipid synthesis in E.coli. 5

(d) Any five industrial significance of lipids. 5

OR

(e) General consideration of Glycolysis and different enzyme involved in Glycolysis. 5