Exam.Code:0432
Sub. Code: 3450

2053

M.Sc. (Applied Chemistry/Pharmaceutical) Second Semester

Paper – 204: Biophysical Chemistry

Time allowed: 3 Hours Max. Marks: 60

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

x-x-x

I. Answer the following:-

a) What are exergonic and endergonic biochemical reactions?

b) Give a brief view of muscle contraction.

c) What is moving boundary electrophoresis?

d) What do you know about reverse micelles? (4x3)

UNIT – I

II. a) Explain in detail the protein folding problem.

b) How can you calculate average dimensions for various chain structures of biopolymers? (6,6)

III. Explain the following:-

a) Synthesis of ATP from ADP

b) Polypeptides and protein structure

c) Role of standard free energy change in a biochemical reaction (3x4)

UNIT – II

IV. Describe in detail:-

a) Thermodynamics of biopolymer solution

b) Osmotive process (6,6)

V. a) Give a detailed note on nerve conduction.

b) Explain ion transport through cell membrane. (6,6)

UNIT – III

VI. Explain the following:-

a) Fick's law of diffusion

b) Zonal electrophoresis

c) Ultra centrifugation (3x4)

P.T.O.

VII. Describe the following:-

a) Isoelectric focusing

b) Donnan membrane effect

c) Drug absorption

(3x4)

UNIT – IV

VIII. a) Describe fundamental concepts of Rayleigh scattering.

b) How Debey Huckle theory of biomolecules can be applied to protein purification? Explain.

(6,6)

IX. a) How biomolecular can you stabilized by denaturation? Explain.

b) What are Micelles and liquid membranes?

(6,6)

x-x-x