Exam.Code:0436
Sub. Code: 3474

2053

M.Sc. (Biotechnology) Second Semester

MBIO-203: Biophysical and Biochemical Techniques

Time allowed: 3 Hours Max. Marks: 80

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 is the principle of adsorption chromatography?

(b) What is hydrophobic interaction chromatography?

(c) What is spin coupling in NMR?

(d) What is a crystal lattice?

(e) What is the principle of isoelectric focussing?

(f) What is western blotting?

(g) Define a radiotracer?

(h) What is quenching of radioactivity? (8x2)

UNIT - I

II. a) Discuss the principle and procedure of ion exchange chromatography.

b) Discuss the technique and applications of HPLC. (2x8)

III. a) Discuss the technique of GLC.

b) Discuss the apparatus and principle of molecular exclusion chromatography. (2x8)

UNIT - II

IV. a) Discuss the working of a IR spectrophotometer.

b) Discuss different types of analysers in mass spectrometry. (2x8)

V. a) Discuss in process of X ray crystallography for biomolecules.

b) Discuss the components of florescence spectrophotometer. (2x8)

UNIT - III

VI. a) Describe the technique of density gradient centrifugation.

b) Discuss the method of native PAGE. (2x8)

P.T.O.

VII. a) Explain the applications and working of an analytical ultracentrifuge.

b) Describe the parts of horizontal electrophoresis apparatus. (9,7)

UNIT - IV

VIII. a) Discuss the technique and applications of Autoradiography.

b) Explain the technique and applications of northern blotting. (2x8)

IX. a) Discuss the technique of liquid scintillation counting.

b) Describe the Sanger's method for DNA sequencing. (2x8)

x-x-x