Exam.Code:0436
Sub. Code: 3474

2072

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 briefly:-

a) Define chromato focussing .

b) What is reverse phase chromatography?

c) What is spin coupling in NMR?

d) What is X ray diffraction?

e) What is the principle of 2D electrophoresis?

f) What is southern blotting?

g) Define specific radioactivity?

h) What is a scintillation cocktail? (8x2)

UNIT - I

II. a) Discuss the principle and procedure of size exclusion chromatography.

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

III. a) Discuss the instrumentation of GLC.

b) Discuss the parts of TLC apparatus. (2x8)

UNIT - II

IV. a) Discuss the working of a double beam UV visible spectrophotometer.

b) Discuss the procedure and significance of MALDI TOF technique. (2x8)

V. a) Discuss in brief the steps in X ray crystallography of a protein.

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

P.T.O.

UNIT - III

VI. a) Describe applications and types of different rotors employed in centrifugation technique.

b) Discuss the method of horizontal electrophoresis for DNA. (2x8)

VII. a) Explain the working of analytical centrifuge.

b) Describe the parts of native PAGE apparatus, (9,7)

UNIT - IV

VIII. a) Discuss the types and properties of different radiotracers.

b) Explain the technique of western blotting. (2x8)

IX. a) Discuss the technique of radioisotope quantitation employing GM counter.

b) Describe the Edman degradation method for protein sequencing. (2x8)

x-x-x