Fourth Semester B. Sc. Examination

BIOCHEMISTRY

Paper - II

(Biophysical and Biochemical Techniques)

Time : Three Hours] [Max. Marks : 50

N. B. : (1) All questions are compulsory and carry equal marks.
(2) Draw diagrams wherever necessary.

1. Discuss in detail factors affecting electrophoretic mobility. 10

OR

Describe in detail principle and method of paper electrophoresis. 10

2. Explain the procedure of SDS-PAGE. 10

OR

Describe the procedure of isoelectric focussing. 10

3. Discuss the principle, instrumentation and technique of scintillation counting. 10

OR

(a) Explain the principle of Tracer technique. 5

(b) Write a note on Mass Spectrometry. 5

4. Describe isolation of cell components using differential centrifugation technique. 10

OR

(a) Write a note on preparation of density gradient for density gradient centrifugation. 5

(b) Compare Rate zonal and Isopycnic centrifugation. 5

5. Solve any **ten** of the following :—

(i) What is used to disrupt hydrophobic interactions during electrophoresis ? 1

(ii) Why are gels used during electrophoresis ? 1

(iii) What is full form of SDS ? 1

(iv) What should be the pH of buffer at cathode during isoelectric focussing ? 1

(v) In which immunodiffusion technique both antigens and antibody are free to diffuse ? 1

(vi) What does 'E' stands for in ELISA ? 1

(vii) How do stable isotopes differ from radioisotopes ? 1

(viii) Give one use of ^{14}C. 1

(ix) What is Radioactive decay ? 1

(x) What is Svedberg constant ? 1

(xi) Which rotors are completely free from wall effects ? 1

(xii) What is a clinical centrifuge ? 1