Bachelor of Science (B.Sc.) Semester-IV Examination

BIO-CHEMISTRY (BIOPHYSICAL & BIOCHEMICAL TECHNIQUES)

Paper—II

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. Write short notes on :

(a) High voltage electrophoresis 5

(b) Detection of macromolecules in Gel Electrophoresis. 5

OR

Elaborate upon types of gels used during electrophoresis. 10

2. Describe various types of immunodiffusion techniques. 10

OR

Write short notes on :

(a) Carrier Ampholytes 5

(b) Radioimmunoassay. 5

3. Write short notes on :

(a) Applications of isotopes in Biochemistry 5

(b) Labelled and schematic diagram of Mass Spectrometry. 5

OR

(c) Geiger-Muller Counter 5

(d) Tracer Techniques. 5

4. Compare Rate-zonal and Isopycnic density gradient centrifugation. 10

OR

Write short notes on :

(a) RCF 5

(b) Sedimentation velocity method. 5

5. Answer any **TEN** :

(i) Can 2 proteins with same molecular weight and density give separate bands after electrophoresis ?

(ii) Mention any one application of cellulose acetate electrophoresis.

(iii) Name a cationic detergent used as solubilizer during electrophoresis.

(iv) Name a tracking dye used during electrophoresis.

(v) What do you understand by "Disc" in Disc gel electrophoresis ?

(vi) What is the solidifying agent used during immunodiffusion technique ?

(vii) Name the isotope of sulphur commonly used in biochemical studies.

(viii) Which radioisotope can be used to distinguish proteins from nucleic acids ?

(ix) Give the relation between Curie and Becquerel.

(x) What is svedberg constant ?

(xi) What happens to a sedimenting molecule when the density of the medium is less than the density of molecule ?

(xii) What are wall effects ? 1×10