

B.Sc. (CBCS Pattern) Semester-IV
**USBCT-C08 - Biochemistry Paper-II - Biophysical and Biochemical
Techniques-II**

P. Pages : 2

Time : Three Hours



GUG/W/24/11999

Max. Marks : 50

- Notes : 1. All questions are compulsory.
2. All questions carry equal marks.

1. Discuss in detail gel electrophoresis with respect to types of gel, procedure and detection. **10**

OR

- a) Write a note on factors affecting electrophoretic mobility. **2½**
- b) Discuss the detection techniques of paper electrophoresis. **2½**
- c) Discuss the applications of paper electrophoresis. **2½**
- d) Discuss the application of gel electrophoresis in molecular biology. **2½**

2. Discuss in details separation of proteins by SDS-PAGE electrophoresis. **10**

OR

- a) Discuss the principle of isoelectric focusing. **2½**
- b) Write a note on Radioimmunoassay (RIA) **2½**
- c) Write a note on ELISA. **2½**
- d) Discuss the principle of DISC-Gel electrophoresis. **2½**

3. Discuss in detail isotopic tracer technique. **10**

OR

- a) Discuss the pattern and rate of radioactive decay. **2½**
- b) Write a note on radioactive and stable isotopes. **2½**
- c) Write a note on Geiger-Muller counter. **2½**
- d) Discuss the applications of isotopes in biology with respect to clinical study. **2½**

4. Discuss the Isolation of cell components by differential centrifugation techniques. 10

OR

- a) Write a note on types of centrifuges. 2½
- b) Write a note on different types of rotors used in centrifuge. 2½
- c) Discuss Isopycnic centrifugation techniques. 2½
- d) Discuss the principle of centrifugation and sedimentation. 2½

5. Attempt **any ten** of the following.

- a) Name two buffer used in paper electrophoresis for protein separation. 1
- b) Who introduced the techniques Cellulose Acetate Electrophoresis? 1
- c) In electrophoresis current carried by both, buffer ion and protein ----- (True or false). 1
- d) Give one example of carrier ampholytes used in isoelectric focusing electrophoresis techniques. 1
- e) Give two applications of isoelectric focusing. 1
- f) Give application of immuno-electrophoresis. 1
- g) Give units of radioactivity. 1
- h) Define the term autoradiography. 1
- i) Give one application of ^{131}I . 1
- j) Define Svedberg constant. 1
- k) Give full form of RCF. 1
- l) What is maximum speed of ultracentrifuge? 1
