

**NRT/KS/19/2132**

**Bachelor of Science (B.Sc.) Semester-IV Examination**  
**BIOTECHNOLOGY (Biostatics & Biophysical Techniques-II)**  
**Optional Paper-II**

Time : Three Hours]

[Maximum Marks : 50

**Note** :— (1) All questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. Describe in detail cellulose-acetate electrophoresis. 10

**OR**

Describe in detail slab gel electrophoresis. 10

2. Describe the principle, procedure and applications of isoelectric focussing. 10

**OR**

Give a detailed explanation of pulsed-field gel electrophoresis. 10

3. Write notes on :

(a) Liquid scintillation counter. 5

(b) Ionization chamber. 5

**OR**

Discuss the principle of isotopic tracer technique in metabolic studies. 10

4. Describe mean, mode and median with suitable examples. 10

**OR**

Write a detailed note on density gradient centrifugation. 10

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

(i) Name any one factor affecting electrophoretic mobility. 1

(ii) Name the tracking dye used in gel electrophoresis. 1

(iii) What is the role of TEMED in polyacrylamide gel preparation ? 1

(iv) What is the full form of SDS ? 1

(v) Give any one application of SDS-PAGE. 1

(vi) What is meant by isoelectric pH ? 1

(vii) Define curie. 1

(viii) What is a negatron ? 1

(ix) What is dead time in GM counter ? 1

(x) What is standard error ? 1

(xi) What is RCF ? 1

(xii) What is Svedberg unit ? 1