

NTK/KW/15–5880

Fourth Semester B. Sc. Examination

BIOTECHNOLOGY

Paper – II

Biostatistics and Biophysical Techniques – II

Time : Three Hours]

[Max. Marks : 50

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

1. Describe in detail Paper Electrophoresis.

OR

Describe different types of Gels and Solubilizers. 10

2. Write in detail SDS–PAGE Electrophoresis.

OR

Describe in detail isoelectric focussing. 10

3. (a) Describe the principle of tracer technique. 5
(b) Write a note on radio active decay and decay constant. 5

OR

- (c) Explain Geiger–Muller Counter. 5
(d) Write a note on isotope dilution technique. 5

NTK/KW/15–5880

Contd.

4. Write notes on :

- | | |
|--------------------------------------|----------------|
| (a) Density gradient centrifugation. | $2\frac{1}{2}$ |
| (b) Arithmetic mean. | $2\frac{1}{2}$ |
| (c) Standard deviation. | $2\frac{1}{2}$ |
| (d) Ultracentrifuge. | $2\frac{1}{2}$ |

OR

- | | |
|---|----------------|
| (e) Differential centrifugation. | $2\frac{1}{2}$ |
| (f) Sedimentation velocity technique for determination of molecular weight. | $2\frac{1}{2}$ |
| (g) Standard error. | $2\frac{1}{2}$ |
| (h) RCF. | $2\frac{1}{2}$ |

- | | |
|---|---|
| 5. (i) What is high voltage electrophoresis ? | 1 |
| (ii) What is electrophoretic mobility ? | 1 |
| (iii) Name two methods of estimation of macromolecules. | 1 |
| (iv) Give one application of pulse – field gel electrophoresis. | 1 |
| (v) What is subunit stoichiometry ? | 1 |
| (vi) What are the Components of polyacrylamide gel ? | 1 |
| (vii) Name any two stable isotopes used in biology. | 1 |

- | | |
|---|---|
| (viii) Name any two radio isotopes used in biology. | 1 |
| (ix) What is Cerenkov radiation ? | 1 |
| (x) What is clinical centrifuge ? | 1 |
| (xi) What is mode ? | 1 |
| (xii) Define Svedberg unit. | 1 |