

BIOCHEMICAL AND MOLECULAR BIOLOGY TECHNIQUES

Paper-VI : Semester-IV

Time Allowed : Three Hours

Maximum Marks : 70

Note : The candidates are required to attempt two questions each from Section A and B carrying 12 marks each and the entire Section C consisting of 11 short answer type questions carrying 2 marks each.

SECTION-A

1. Write short notes on any four of the following :
(a) Southern Blotting (b) Western Blotting
(c) Light Microscopy (d) SEM (e) Kunkel's method. 4×3=12
2. Write the principle and applications of Electron Microscope. 12
3. Discuss the importance of site directed Mutagenesis in Biological studies. 12
4. Write brief account of the following :

- (a) Electrophoretic assay for DNA binding Proteins.
(b) In vitro Transcription. (c) Reverse Transcriptase PCR. $4 \times 3 = 12$

SECTION-B

5. Compare the technique and applications of GC and TLC. 12
6. Discuss the principle, technique and applications of Protein purification using the Affinity chromatography. 12
7. Write the principle of Electrophoretic separation of Biomolecules. Describe its applications. 12
8. Discuss various methods for qualitative and quantitative analysis of Nucleic acids. 12

SECTION-C

9. Write brief account of the following : $11 \times 2 = 22$
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| (i) Biuret method. | (ii) Iso-electric Focusing. |
| (iii) Reverse Transcriptase. | (iv) Colorimeter. |
| (v) UV-Spectrometry. | (vi) Ultrafiltration. |
| (vii) RIA. | (viii) I.U. Enzyme activity. |
| (ix) PCR Primers. | (x) Immunoglobulins. |
| (xi) Beer and Lambert's law. | |
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