

19. Write in detail about the principle, operation, types and application of the technique which works under the influence of the centrifugal field.
20. Explain the principle of the electrophoretic technique which separates DNA fragments based on the differences in base pair sequences and capable of distinguishing single base changes.
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S.No. 6122

P 16 BTE 1

(For candidates admitted from 2016–2021 batch)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Biotechnology — Elective

BIO INSTRUMENTATION

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20)

Answer ALL Questions

Define the following:

1. FT-IR
2. Polarography
3. SEM
4. Dark Field Microscopy
5. Fluorimeter
6. UV-Visible Spectrometer
7. HPLC

8. Density Gradient Centrifugation
9. Moldi Tof
10. Isotachophoresis

SECTION B — ($5 \times 5 = 25$)

Answer ALL Questions, Choosing either (a) or (b)

11. (a) Write briefly about the application of ECG.

Or

- (b) Write short notes on Radioactivity.

12. (a) Write briefly about the application of ELISA reader.

Or

- (b) Discuss briefly about the principle of UV - Visible spectrophotometer

13. (a) Write short notes on inverted phase contract microscope.

Or

- (b) Briefly explain the principle of fluorescent microscope.

14. (a) Write short notes on the operation and application of Centrifugation.

Or

- (b) Distinguish between Ion - exchange Chromatography and affinity chromatography.

15. (a) Write briefly about the four stages of PCR and mention the different types of PCR.

Or

- (b) Describe the technique that the separate proteins based on their size and charge.

SECTION C — ($3 \times 10 = 30$)

Answer any THREE questions

16. Explain in detail the principle and application of the instruments while works using infra red spectroscopy.
17. Describe the different types of electron microscopy and its application with appropriate illustration.
18. Write in detail the definition, uses, types and application of calorimetry with suitable a diagram.