CBCS SCHEME

USN | | | | | | | | | | |

18BT55

Fifth Semester B.E. Degree Examination, June/July 2023
Bioanalytical Techniques

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Give an account on principle and equipment of electrophoresis. **(10 Marks)**

b. Explain ISO-electric focusing and write about applications of electrophoresis in analyzing macromoleculer. **(10 Marks)**

OR

2 a. Explain the principle of chromatography and give brief note on different methods of chromatographic techniques. **(10 Marks)**

b. Discuss in detail on Ion exchange and Gel exclusion chromatography with neat representative illustrations. **(10 Marks)**

Module-2

3 a. Distinguish between column, thin layer and paper chromatography methods. **(10 Marks)**

b. Discuss in detail about cell fractionation and flow cytometry with applications. **(10 Marks)**

OR

4 a. Write about HPLC and its instrumentation in detail. **(10 Marks)**

b. Discuss in detail about gas chromatography and its instrumentation. **(10 Marks)**

Module-3

5 a. Explain different methods of spectroscopy in analyzing macromolecules. **(10 Marks)**

b. Distinguish between NMR and Mass-Spectroscopy in detail. **(10 Marks)**

OR

6 a. Give an account on different types of NMR techniques. **(10 Marks)**

b. Explain the role of NMR imaging in the analysis of structures of macromolecules. **(10 Marks)**

Module-4

7 a. Write a note on mass analysis and ion detectors and their significance. **(10 Marks)**

b. What is X-ray diffraction and explain methods to study diffraction patterns. **(10 Marks)**

OR

8 a. Discuss about electron and neutron diffraction in detail. **(10 Marks)**

b. Write a note on specific applications of spectroscopy. **(10 Marks)**

Module-5

9 a. Describe the principle and working of SEM. **(10 Marks)**

b. Explain the principle and working of FTIR. **(10 Marks)**

OR

10 a. Explain principle and protocol for the analysis of biomolecules using UV-VIS spectrophotometer. **(10 Marks)**

b. Explain the principle and functioning of X-ray photoelectron spectroscopy. **(10 Marks)**

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