

CBCS SCHEME

18BT55

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Fifth Semester B.E. Degree Examination, June/July 2024

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. Define Chromatography? Write its principle and any two types in detail. (10 Marks)
b. Describe the process of separation of proteins by electrophoresis. (10 Marks)

OR

- 2 a. State your point of view on cell disruption techniques. (10 Marks)
b. Give the diagrammatic representation and explain iso-electric focusing. (10 Marks)

Module-2

- 3 a. Give the diagrammatic labeled set up of gas chromatography having flame ionization detector. (10 Marks)
b. Describe types of columns used in gas chromatography. (10 Marks)

OR

- 4 a. Discuss in detail about cell fractionation and flow cytometer with applications. (10 Marks)
b. Write about HPLC and its instrumentation in detail. (10 Marks)

Module-3

- 5 a. Define spectroscopy. Explain the basic principle and working of UV-visible spectrophotometer. (10 Marks)
b. How ESR spectroscopy has been useful in structural characterization of metalloproteins? (10 Marks)

OR

- 6 a. Give the applications of IR spectroscopy. (05 Marks)
b. Write a short notes on spin-spin coupling. (05 Marks)
c. Mention the different types of nuclear magnetic resonance spectroscopy (10 Marks)

Module-4

- 7 a. Describe different methods of ionization used in mass spectroscopy. (10 Marks)
b. With a schematic representation explain the protocol of X ray diffraction. (10 Marks)

OR

- 8 a. Write a note on mass analyzers and ion detectors and their significance. (10 Marks)
b. Discuss about electron and neutron diffraction in detail. (10 Marks)

Module-5

- 9 a. Describe the principle and working of TEM. (10 Marks)
b. Explain the principle and working of FTIR. (10 Marks)

OR

- 10 a. Describe the principle and functioning of X-ray photo electron spectroscopy. (10 Marks)
b. Explain the principle, procedure for the analysis of biomolecules using UV-visible spectrophotometer. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

