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Fifth Semester B.E. Degree Examination, July/August 2022
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. Explain the steps involved in the preparation of extracts for biochemical study. (10 Marks)
b. Explain: i) Iso electric focusing ii) Agarose gel electrophoresis. (10 Marks)

OR

- 2 a. Explain the principle of chromatography and compare the different methods of chromatographic techniques. (10 Marks)
b. In detail explain the working applications of capillary electrophoresis. (10 Marks)

Module-2

- 3 a. With a neat sketch, explain the working of flow cytometer with its applications. (10 Marks)
b. With a neat sketch, explain the working principle and instrumentation of HPLC. (10 Marks)

OR

- 4 a. Explain the hyphenated techniques related to GC-MS and its applications. (12 Marks)
b. Distinguish between column, thin layer and paper chromatography methods. (08 Marks)

Module-3

- 5 a. With a neat sketch, explain the working of uv-vis spectroscopy with applications. (12 Marks)
b. Explain the different types of Nuclear magnetic resonance. (08 Marks)

OR

- 6 a. Discuss the concept of IR spectroscopy and its advantages. (10 Marks)
b. Explain the method of electron spin of spectroscopy in analyzing macro molecules. (10 Marks)

Module-4

- 7 a. Write a note on mass analyzers and ion detectors and its significance. (10 Marks)
b. With a schematic representation, explain the X-ray diffraction. (10 Marks)

OR

- 8 a. Explain about electron and neutron diffraction. (10 Marks)
b. Explain the methods related to the determination of crystal structure. (10 Marks)

Module-5

- 9 a. Describe the concept of SEM and its applications. (10 Marks)
b. Explain the principle and working of Laser Raman spectroscopy. (10 Marks)

OR

- 10 a. Explain the principle and working of confocal microscopy and its applications. (10 Marks)
b. Explain the characterization of electrochemical measurements. (10 Marks)

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