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BTS 454

Second Semester M.Sc. Degree Examination, September/October 2022
(CBCS)
BIOTECHNOLOGY
Bioanalytical Techniques

Time : 3 Hours

Max. Marks : 70

PART – A

1. Write Short notes on **any ten** of the following (**not** exceeding **1** page **each**) : (**10×2=20**)

- a) Name the SI units for the following.
Length, Mass, Temperature, Energy.
- b) pH electrodes
- c) PAGE
- d) Factors affecting electrophoresis movement
- e) Principle of Ion exchange chromatography
- f) Paper chromatography
- g) Ultracentrifugation
- h) Radioisotopes
- i) Scintillation counter
- j) Chemiluminescence
- k) Principles of Circular Dichroism
- l) Nanoparticles and nanostructures in the human body.

PART – B

Write explanatory notes on **any five** of the following (**not** exceeding **3** pages) : (**5×6=30**)

2. Centrifuges and two types of rotors used in normal laboratories with figures.
3. Two-dimensional gel electrophoresis and its applications.
4. Plasma emission spectroscopy.
5. Components of Mass spectrometer.

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6. Electromagnetic radiations and their classification based on the spectrum.
7. UV and Visible spectroscopy and common assays.
8. Difference between HPLC and GC based on their principles and applications.

PART – C

Write long answers on **any two** of the following (not exceeding **7** pages) **(2×10=20)**

9. Define HPLC. Write the principle, components, detectors and applications of HPLC.
 10. What is Mass spectrometry ? Give details about instrument and its applications.
 11. Write the principle, instrumentation, factors affecting and applications of UV-VIS spectroscopy.
 12. Discuss nanoparticles, properties and their applications in biology and medicine.
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