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I Semester M.Sc Degree Examination, June/July- 2022

PHYSICS

Techniques In Bio Physics (General)

(CBCS New Scheme 2019-20)

Paper No. : 108



Time : 3 Hours

Instructions to Candidates : All Parts are Compulsory.

## PART - A

I. Answer any six questions.

(6×5=30)

1. Bring out any two types of physico-chemical techniques to determine the properties of Biological Macro molecules.
2. Discuss the small angle X-Ray scattering by Bio molecules in determining their structure.
3. Explain Bright field microscopy in analysing the samples.
4. Sketch any four crystal system along with their lattice parameters.
5. Compare and contrast between UV spectroscopy and IR spectroscopy.
6. Briefly discuss the application of NMR spectroscopy.
7. Derive Bragg's Law of X-Ray diffraction.
8. Explain the steps involved in determining crystal structure.
9. Explain the terms Symmetry elements and point group in crystallography.

## PART - B

II. Answer any four questions.

(4×10=40)

10. Draw a neat diagram of a compound microscope and obtain an expression for its magnification.
11. Explain the principle and working of infrared spectroscopy in identification of functional group in a sample.
12. Define the term, resolution of a microscope and obtain an expression for the same

[P.T.O.]



13. Explain the various parameters used in NMR spectroscopy to characterize biomolecules.
14. Discuss in detail, the principle and working of transmission electron microscope (TEM).
15. Explain how Circular Dichroism is useful in studying biomolecules.

