

B.Pharm III Year I Semester (R15) Supplementary Examinations June 2018

APPLICATION OF SPECTROSCOPIC METHODS IN MOLECULAR STRUCTURE DETERMINATION

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

1 Answer the following: (10 X 02 = 20 Marks)

- Define λ_{max} and chromophore.
- Write the principle involved in visible spectroscopy.
- What is the role of SDS in SDS-PAGE electrophoresis?
- What is isoelectric focusing in electrophoresis?
- Give the principle involved in NMR spectroscopy along with energy level diagram.
- What is Larmor frequency and free induction decay in NMR spectroscopy?
- Explain HRMS in mass spectrometry.
- How to find functional groups in IR spectroscopy?
- Explain the principle of PCR.
- Explain the role of microscopy in bioanalysis & bioassays.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain Beer-Lamberts law with relevant equations.

OR

- Explain different types of electronic transitions in UV spectroscopy.
- Explain theory involved in UV spectroscopy.

UNIT – II

4 Explain the method of analyzing macromolecules using gel electrophoresis.

OR

5 Write the principle, theory and applications of electrophoresis.

UNIT – III

6 Write a note on spin – spin coupling in NMR spectroscopy.

OR

7 How will you interpret NMR spectra? Give its applications.

UNIT – IV

8 Write the fragmentation pattern of molecules in mass spectrometry.

OR

9 Give the instrumentation and applications of IR spectroscopy.

UNIT – V

10 What are modern approaches in bioanalysis & bioassays? Explain.

OR

11 Explain double beam UV-visible spectrophotometer and its applications in bioanalysis.
