Code: 15R00505

R15

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)

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

(a) Define λmax and chromophore.
(b) Write the principle involved in visible spectroscopy.
(c) What is the role of SDS in SDS-PAGE electrophoresis?
(d) What is isoelectric focusing in electrophoresis?
(e) Give the principle involved in NMR spectroscopy along with energy level diagram.
(f) What is larmor frequency and free induction decay in NMR spectroscopy?
(g) Explain HRMS in mass spectrometry.
(h) How to find functional groups in IR spectroscopy?
(i) Explain the principle of PCR.
(j) 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

3 (a) Explain different types of electronic transitions in UV spectroscopy.
(b) 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 spectroscopy.

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.

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