Rajiv Gandhi University of Health Sciences

First Year M. Pharm Degree Examination - Oct/Nov 2014

[Time: 3 Hours]   [Max. Marks: 100]

Modern Pharmaceutical Analysis
(Revised Scheme 4)

Q.P. CODE: 9336

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

LONG ESSAY (Answer any TWO)   **2 X 20 = 40 Marks**

1.   a) Draw a neat labeled diagram of mass spectrophotometer and explain the different ions produced in fragmentation.
     b) Explain the general fragmentation rules for organic compounds in mass spectroscopy.
     (12+8)

2.   a) What is chemical shift in NMR? Write factors affecting the chemical shift.
     b) Write a brief account on C-NMR and its applications.   (12+8)

3.   a) What are the differences between dispersive and FT-IR spectrophotometer?
     b) How will you identify the following functional groups in an organic compound?
     OH-, -NH$_2$, --COOR, -C=C-, -CHO
     c) Instrumentation of HPTLC   (6+5+9)

SHORT ESSAY (Answer any FIVE)   **5 X 10 = 50 Marks**

4.   Explain the Octant rule and immuno-electrophoresis.

5.   Draw a neat labeled diagram of HPLC, and explain the various detectors used in HPLC.

6.   Explain Woodward's rule and its applications in structural elucidation.

7.   Explain the detectors and derivatisation techniques in GC.

8.   Explain principle and working of phototube and photomultiplier tube detector in UV-Visible spectrophotometer.

9.   What is Bragg's law? What is application in X-ray crystallography and Miller indices?

SHORT NOTES   **2 X 5 = 10 Marks**

10. Brief note text citation and bibliography writing

11. Differential scanning calorimetry

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