Rajiv Gandhi University of Health Sciences

First Semester M. Pharm Degree Examination - DEC-2017

[Time: 3 Hours]   [Max. Marks: 75]

Modern Pharmaceutical Analytical Techniques
Q.P. CODE: 5101

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

LONG ESSAY (Answer any Three)   **3 X 10 = 30 Marks**

1. Explain the theory of IR spectroscopy. Outline the instrumentation of FTIR and explain any two detectors used. (3+3+4)
2. Explain shielding and deshielding in NMR spectroscopy. Discuss decoupling technique using nuclear magnetic double resonance. (5+5)
3. Explain the mass fragmentation and its rules. Write note on meta stable ions and isotopic peaks. (6+4)
4. Discuss Van Deemter equation. Explain the various derivatization techniques of GC. (3+7)

SHORT ESSAY (Answer any Nine)   **9 X 5 = 45 Marks**

5. Explain the principle and instrumentation of atomic absorption spectroscopy.
6. Describe electronic transitions in UV- Visible spectroscopy. Add a note on effects of solvents on UV spectra.
7. Explain the differences in splitting pattern of ^{1}H-NMR and ^{13}C-NMR with suitable examples.
8. Discuss relaxation process involved and solvent used in NMR spectroscopy.
9. Describe electron impact and chemical ionization techniques in mass spectroscopy.
10. Describe the principle and applications of gel chromatography.
11. Explain the working of any two types of pumps and sample injection system in HPLC.
12. Explain the methods of production of X-rays and applications of X-ray diffraction.
13. Discuss principle and various factors affecting electrophoresis.
14. Write the Principle of radioimmunoassay

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