

Rajiv Gandhi University of Health Sciences

First Semester M. Pharm Degree Examination - MAY-2018

[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. Define and derive Beer Lambert's law. Draw a diagram of double beam UV-spectrometer and explain the radiation sources and detectors. (5+2+3)
2. Discuss the principle of NMR-spectroscopy. Explain chemical shift and factors influencing chemical shift. (3+3+4)
3. Explain any three types of ionization techniques and analyzers in mass spectrometry. (6+4)
4. Define the term chromatography, chromatogram and chromatograph. Discuss in detail about the efficiency parameters with relevant equations. (3+7)

SHORT ESSAY (Answer any Nine)

9 X 5 = 45 Marks

5. Write the principles of IR Spectroscopy and discuss the factors affecting the vibrational frequencies
6. Explain theory of fluorescence and factors affecting fluorescence.
7. Write a note on ¹³C-NMR spectroscopy.
8. Explain spin-spin coupling and coupling constant.
9. Explain Mc Lafferty rearrangement with suitable examples.
10. Explain the principle and mechanism of ion exchangers in chromatography.
11. Discuss the principle and working of FID and ECD of gas chromatography.
12. Define and derive Bragg's law and explain rotating crystal technique.
13. Explain the working conditions of moving boundary electrophoresis.
14. Describe radio-immunological assays and bioluminescence assays.

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