

QP Code: 101350

Reg No:

**First Year M.Pharm Degree Supplementary Examinations– March 2014
(2011 Scheme)**

Modern Analytical and Research Methods

(Common for all branches)

Time: 3 hrs

Maximum Marks: 100

- *Answer all questions*
- *Draw diagrams wherever necessary*

Essays:

(2x20 =40)

1. Explain the theory of infra red (IR) spectroscopy. Add a note on sample handling techniques and attenuated total reflectance (ATR). (10+5+5=20)
2. Describe the theory behind mass spectrometry. Explain the fragmentation rules. Illustrate the fragmentation pattern of any two compounds. (10+5+5=20)

Short Essays:

(6x10=60)

3. What are the different types of detectors used in gas chromatography
4. Explain spin coupling in nuclear magnetic resonance (NMR) spectroscopy. Add a note on shift reagents
5. Explain the different quantification techniques in UV-visible spectrophotometry
6. Briefly explain the theory of atomic absorption spectrophotometry. Mention its applications in pharmacy.
7. Explain the origin of fluorescence spectra using Jablonski diagram.
8. Describe the following :
 - Standard deviation
 - Variance
 - Correlation
 - Regression
