

March 2010

[KW 315]

Sub. Code: 2851

**M.PHARM. DEGREE EXAMINATION**  
**(Regulations 2006)**  
**(For candidates admitted from 2006-2007 onwards)**

**FIRST YEAR**

**Paper I – MODERN PHARMACEUTICAL ANALYTICAL**  
**TECHNIQUES**

**(Common to all Branches)**

***Q.P. Code : 262851***

**Time : Three hours**

**Maximum : 100 marks**

**Answer All questions**

**I. Essay Questions : (3 x 20 = 60)**

1. a) Discuss the important principles and instrumentation of nuclear magnetic resonance spectroscopy.
- b) Explain the techniques of decoupling interaction between <sup>13</sup>C-NMR and <sup>1</sup>H-NMR (Nuclear magnetic resonance) spectroscopy.
2. Enumerate the detectors used in the UV – spectroscopy, IR – spectroscopy and HPLC (High Performance Liquid Chromatography) techniques. Explain any one with neat diagram.
3. a) Explain the principle and methodology of differential scanning calorimetry.
- b) Discuss the working principle and applications of HPTLC (High Performance Thin Layer Chromatography) technique with instrumentation.

**II. Write Short Notes : (8 x 5 = 40)**

1. Discuss the wood-ward's rule and its applications.
2. Explain the working principle and applications of fast atom bombardment mass spectroscopy.
3. Write a note on flame emission spectroscopy and its applications.
4. Explain the principle of flurometry with one suitable example and its applications.
5. Write a brief note on electron spin resonance spectroscopy and its limitations.
6. Write a brief note on LC-MS.
7. Write the principle and applications of Radio immuno assay.
8. Students – T- test.

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September 2010

[KX 315]

Sub. Code: 851

**M.PHARM. DEGREE EXAMINATION**

**(Regulations 2006)**

**(For candidates admitted from 2006-2007 onwards)**

**FIRST YEAR**

**Paper I – MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**

**(Common to all Branches)**

*Q.P. Code : 262851*

**Time : Three hours**

**Maximum : 100 marks**

**Answer All questions**

**I. Essay Questions :**

**(3 x 20 = 60)**

1. a) Explain in detail the rules for interpreting High Resolution PMR spectra with suitable examples.  
b) What is Cotton effect and Circular dichroism? Write their applications.
2. a) Write the working principle of Thermo gravimetric analysis.  
b) Describe types of ion exchangers and their applications in chromatography?
3. a) Outline the differences between HPTLC and TLC.  
b) Explain the importance of student T-test in statistical analysis of significant data.

**II. Write Short Notes :**

**(8 x 5 = 40)**

1. Anisotropic effect and inductive effect in determining chemical shift with examples.
2. Principle of chemical ionization in mass fragmentation process and its advantages over electron impact ionization.
3. Decoupling methods in C-13 NMR spectroscopy.
4. Instrumentation of Spectrofluorimetry.
5. Application of Flame emission and Atomic absorption spectrometry.
6. Impact of auxochromes in causing types of shift in UV-spectra with relevant examples and diagrams.
7. Interpretation of organic molecules through vibrational frequency spectra.
8. High performance Liquid Chromatograph – construction and working.

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