

**M.PHARM. DEGREE EXAMINATION  
(PCI New regulations 2016)  
SEMESTER-I  
PHARMACEUTICS – MPH  
PAPER I – MODERN PHARMACEUTICAL ANALYTICAL  
TECHNIQUES**

*Q.P. Code : 262931*

**Time : Three hours**

**Maximum : 75 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. a) Explain theory and instrumentation of Mass spectrometry.  
b) Explain various methods to simplify the NMR Spectra.
2. a) Write on principles of separation and detection methods in HPLC.  
b) Give the factors affecting resolution and peak shapes of compounds in HPLC.

**II. Write notes on:**

**(7 x 5 = 35)**

1. Give an account of qualitative and quantitative analysis using UV spectroscopy.
2. Write principle and importance of Radioimmuno assays.
3. Calculate the concentration of compound X using A (1%, 1cm) 9 at wavelength 2.57nm, at a 1.5cm cell, with absorbance 0.4527.
4. What are the factors affecting vibrational frequency?
5. Describe Bragg's Law and its application to pharmaceuticals.
6. Write principle of electrophoresis techniques.
7. Calculate the Resolution and number of theoretical plates for compound A with Rt-4.2 min, peak width 1mm and compound B with Rt-8.1 min having peak width 1mm.

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