

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LO 951]

MAY 2019

Sub. Code: 2951

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

*Q.P. Code : 262951*

**Time : Three hours**

**Maximum : 75 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. a) Write in detail on various principles of separation and chromatographic parameters of HPLC.  
b) Calculate the Hydrogen deficiency for the compound  $C_6H_5COOH$ .  
c) Discuss the  $^1H$ NMR signals of = Toluene.
2. a) Explain the types of ionization in Mass spectrometry. Draw and label single quadrupole mass instrument.  
b) Write on peaks and application of Mass spectrometry.

**II. Write notes on:**

**(7 x 5 = 35)**

1. Write differential scanning calorimetric interpretation of two compounds.
2. Concepts of capillary electrophoresis.
3. With neat diagram give working of Katherometer and Electron capture detector.
4. Factors affecting vibration frequencies of IR spectra.
5. Write the principles of fluorimetry.
6. Write about elemental analysis by Flame emission spectroscopy.
7. Construction and working of a double beam spectrophotometer.

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