

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

[LQ 0121]

JANUARY 2021

Sub. Code: 2941

(APRIL 2020 EXAM SESSION)

M.PHARMACY DEGREE EXAMINATION

SEMESTER-I (PCI New regulations 2016)

PHARMACEUTICAL CHEMISTRY – MPC

PAPER I – MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Q.P. Code : 262941

Time : Three hours

Answer ALL Questions

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. a) Explain with illustrations the working principle, instrumentation and applications of UV single beam spectrophotometer.
b) Enumerate any two factors influencing the followings:
 - i) Vibrational frequencies
 - ii) Fluorescence
 - iii) Band broadening in Chromatographic column
 - iv) Resolution and
 - v) Source of errors in Potentiometry.
2. a) Give the IR interpretation of following.
 - i) $C_6H_5CH = CH - CHO$ (Cinnamaldehyde)
 - ii) $CH_3 - \overset{O}{\parallel} - C_6H_5$ (Acetophenone)b) Discuss the 1H NMR signals of
 - i) Ethanol (CH_3CH_2OH)
 - ii) Phenol (C_6H_5OH)

II. Write notes on:

(7 x 5 = 35)

1. Principle, experimental parameters and applications of Differential thermal analysis.
2. Discuss about the detectors and sampling techniques in IR spectroscopy.
3. Write a brief account on the theory and applications of :
 - a) Capillary electrophoresis and
 - b) X-ray crystallography.
4. Compare and contrast of the followings:
 - a) Normal and reverse phase chromatography
 - b) Gradient and isocratic elution
5. Explain the production of X- rays and Bragg's Law.
6. Outline the salient features of NMR spectroscopy which are used in structural elucidation.
7. Give an account on Derivative spectroscopy.
