

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

**[MPHARM 0921]**

**SEPTEMBER 2021  
(OCTOBER 2020 EXAM SESSION)**

**Sub. Code: 2981**

**M.PHARMACY DEGREE EXAMINATION  
SEMESTER-I (PCI New regulations 2016)  
PHARMACOLOGY – MPL**

**PAPER I – MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES  
*Q.P. Code : 262981***

**Time : Three hours**

**Answer ALL Questions**

**Maximum : 75 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. a) Discuss about the modes of molecular vibrations and factors affecting vibrational frequencies in IR Spectroscopy.  
b) Write a note on types of ion exchangers and the mechanism involved in ion exchange chromatography.
2. Explain the principle, instrumentation and applications of the HPLC.

**II. Write notes on:**

**(7 x 5 = 35)**

1. Write a note on Bragg's law.
2. Write a note on chemical shift and spin-spin coupling.
3. Describe the principle and applications of isoelectric focusing and zone electrophoresis.
4. Write the instrumentation of atomic absorption spectroscopy.
5. Discuss about the factors affecting chemical shift.
6. Write about the solvent requirement in NMR Spectroscopy.
7. Calculate the concentration in mcg/ml of a solution of tryptophan (molecular weight 204.2) in 0.1M Hydrochloric acid, giving an absorbance at its wavelength maxima, 277nm, of 0.613 in a 4cm cell. The molecular absorptivity at 277 nm is 5432.

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