

**VINAYAKA MISSION'S RESEARCH FOUNDATION  
(DEEMED TO BE UNIVERSITY), SALEM**

**M.PHARM. DEGREE EXAMINATION – JANUARY 2021  
First Semester**

**BRANCH: PHARMACOLOGY**

**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**

Time : Three hours

Maximum: 75 marks

**(Draw neat labeled diagrams wherever necessary  
your answer should be specific to the questions asked)**

**SECTION –A**

I. Answer any **THREE** questions: **(3 x 15 = 45)**

1. a) Discuss the theory and applications of UV-Visible Spectroscopy.  
b) What are the different factors affecting Fluorescence?  
c) Explain the principle of an IR Spectrometer with a neat diagram
2. a) Elaborate about High Performance Thin Layer Chromatography (HPTLC).  
b) Explain the steps involved in the analysis of drugs using HPTLC.
3. Explain fragmentation rules in Mass spectrometry. Briefly write on interpretation of Mass Spectra.
4. Briefly explain on origin and production of X- rays and Explain X-ray Crystallography.

**SECTION –B**

II. Answer any **THREE** questions: **(3 x 10 = 30)**

5. Write a brief note on Thermogravimetric Analysis (TGA).
6. Chemical shift and its importance.
7. What are the various detectors used in Gas Chromatography?
8. a) Write short notes on Coupling Constant.  
b) Write on affinity chromatography.

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