

QP CODE: 111350

Reg. No:.....

**First Semester M.Pharm Degree Supplementary Examinations  
July 2025  
Paper I: Modern Pharmaceutical Analytical Techniques (MPT 101T)  
(2019 and 2024 Scheme)**

Time: 3 Hours

Total Marks: 75

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

**Essays**

**(3x10=30)**

1. Define Bragg's law. Add note on different x- ray methods and applications of x- ray diffraction.
2. Explain principle and instrumentation of gel electrophoresis. Enlist the factors affecting separation.
3. Explain the instrumentation and application of NMR. Brief the principle of FT-NMR.

**Short Notes**

**(9x5=45)**

4. What are quenchers. Enlist the factors affecting fluorescence in spectrofluorimetry.
5. What are the choice of solvents and solvent effect of UV-Visible spectroscopy.
6. Describe the theory and modes of molecular vibration of Fourier Transform IR spectroscopy.
7. Give notes on isotopic peaks and applications of mass spectroscopy.
8. Write the principle and application of differential thermal analysis.
9. Write in detail about factors influencing chemical shift
10. Write the principle and working of ion selective electrodes in potentiometry.
11. Discuss the factors affecting resolution in High Performance Liquid Chromatography.
12. Write a detail note about ELISA.

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