Subject Code: MPL101T

PAPER ID-310813

Roll No: | | | | | | | | | | | | | |

MPHARM
(SEM I) THEORY EXAMINATION 2025-26
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

TIME: 3 HRS M.MARKS: 75

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a.	DefineChromophore and Auxochrome with one example each.
b.	Differentiate between Stretching and Bending molecular vibration.
c.	Explain meta stable ions with suitable example.
d.	Define the spin-spin splitting.
e.	List two advantages of HPTLC over TLC.
f.	Give two application of X-RAY crystallography.
g.	State the principle of Thermogravimetric Analysis (TGA).
h.	Define isotopic peaks.
i.	State the principle of RIA.
j.	What is zone electrophoresis?

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

a.	Illustrate the principle, instrumentation and application of UV-visible spectroscopy. Explain solvent effect of UV spectroscopy.
b.	Discuss the APCI, ESI, and chemical ionization techniques.
c.	Give a brief idea on DSC and DTA. https://www.pyqonline.com

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a.	Explain the mass fragmentation and its rule.
b.	Demonstrate the Instrumentation and principle of the fluorescence spectrophotometer.
c.	Discuss the principle and instrumentation of HPTLC.
d.	Write a note on Capillary electrophoresis.
e.	Explain the principle of X-ray crystallography and discuss how Bragg's law is used to determine crystal structure.
f.	Describe the Instrumentation and Application of the NMR Spectroscopy.
g.	Write a note on ELISA.

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