



Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**MPHARM**  
**(SEM I) THEORY EXAMINATION 2023-24**  
**MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES**

TIME: 3HRS

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.	Define bathochromic shift with an example.
b.	What do you mean by functional group regain?
c.	Explain the role of a monochromator in UV spectroscopy.
d.	What do you the chemical shift?
e.	Define the spin-spin splitting.
f.	Define base peak with an example.
g.	Classify chromatographic techniques according to their principle
h.	Recall the name of detectors in UV spectroscopy.
i.	What do you mean by Competitive ELISA?
j.	Tell the pharmaceutical importance of potentiometry.

## SECTION B

2. Attempt any *two* parts of the following:

2 x 10 = 20

a.	Demonstrate the principle and instrumentation of the fluorescence spectrophotometer.
b.	Discuss the APCI, ESI, and chemical ionization techniques.
c.	Outline the instrumentation of UV spectroscopy.

## SECTION C

3. Attempt any *five* parts of the following:

7 x 5 = 35

a.	Discuss the different types of electronic transition in UV -vis spectroscopy.
b.	Describe the Instrumentation and Applications of the NMR Spectroscopy.
c.	Explain the mass fragmentation and its rules.
d.	Outline the principle and methodology of chromatography.
e.	Explain different X-ray methods and Bragg's law
f.	Summarize principle, thermal transitions, and instrumentation: Modulated DSC,
g.	Elaborate on the principle and methodology of RIA.