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BPHARM
(SEM VII) THEORY EXAMINATION 2024-25
INSTRUMENTAL METHODS OF ANALYSIS – THEORY

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.	Name the types of electronic transitions involved in UV-Visible spectroscopy.
b.	Define chromophore and auxochrome with example.
c.	What is mull technique?
d.	Differentiate between fluorescence and phosphorescence.
e.	What is electrophoretic mobility?
f.	Mention the advantages of Thin Layer Chromatography (TLC).
g.	Differentiate between isocratic and gradient elution in HPLC.
h.	How does temperature programming affect the separation process in GC?
i.	What is the principle of nephelo-turbidometry?
j.	Discuss the principle behind gel chromatography.

SECTION B

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

2 x 10 = 20

a.	Explain the principles, instrumentation, and applications of UV-Visible spectroscopy.
b.	Discuss Beer-Lambert's law, its derivation, and the deviations observed.
c.	Discuss the principle, theory and instrumentation of HPLC.

SECTION C

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

7 x 5 = 35

a.	Explain principle and applications of spectrofluometry.
b.	Discuss instrumentation and applications of nephelo-turbidometry.
c.	Write the principle and instrumentation of gel electrophoresis.
d.	Outline the mechanism involved in ion exchange chromatography with factors affecting.
e.	Discuss the principles of flame photometry and AAS along with interference in flame photometry.
f.	Explain plate and rate theory involved in chromatography.
g.	Explain the importance of temperature programming along with methodology of GC.