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**BPHARM**  
**(SEM VII) THEORY EXAMINATION 2023-24**  
**PHARMACEUTICAL ANALYSIS-III (PHARMACEUTICAL ANALYSIS & QUALITY ASSURANCE)**

TIME: 3 HRS

M.MARKS: 70

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

## SECTION A

1. Attempt *all* questions in brief.

2 x 7 = 14

a.	What do you understand by auxochromes? Give examples.
b.	Define chemical shift and coupling constant.
c.	Differentiate between quality control and quality assurance.
d.	Enlist the applications of fluorimetry.
e.	Write down the principle of mass spectrometry.
f.	Define spin-spin coupling.
g.	Elaborate the term "ESI" and "FAB"

## SECTION B

2. Attempt any *three* of the following:

7 x 3 = 21

a.	Discuss the various fragmentation pattern in relation to molecular structure in mass spectrometry.
b.	Describe the principle, instrumentation and applications of atomic absorption spectroscopy
c.	Describe the concept of validation, its types along with different validation parameters.
d.	Demonstrate the principle and instrumentation of FTIR with a neat sketch.
e.	Explain woodward-fieser rule in detail with suitable examples.

## SECTION C

3. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Outline the concept of ionization technique in mass spectrometry.
(b)	Discuss the protocols for process validation.

4. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Predict the NMR spectra of ethanol and benzaldehyde.
(b)	Define lambert-beer law. Derive equation.

5. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Write a descriptive note on gel electrophoresis.
(b)	Describe the concept of TQM in detail.

6. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Demonstrate MALDI technique in detail.
(b)	Illustrate the concept of quality audit in detail along with its types.

7. Attempt any *one* part of the following:

7 x 1 = 7

(a)	Elaborate the principle of transmission electron microscopy in detail.
(b)	Discuss the principle and instrumentation of NMR spectroscopy.