



PAPER ID-411070

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Subject Code: MPL101T

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MPHARM
(SEM I) THEORY EXAMINATION 2023-24
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.	Discuss solvent effect in UV-Visible spectroscopy.
b.	Describe Jablonski diagram.
c.	Outline the principle of FT-NMR.
d.	What is the need of coupling constant in NMR spectroscopy?
e.	Discuss metastable ions and isotopic peaks.
f.	Discuss examples of anion exchangers in ion exchange chromatography.
g.	Enlist the factors affecting separation in electrophoresis.
h.	Outline Bragg's law.
i.	Give the principle of TGA.
j.	Discuss applications of RIA.

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

a.	Discuss principle, instrumentation and applications of FT-IR.
b.	Illustrate the role of quantum numbers in NMR. Also explain relaxation process in NMR spectroscopy.
c.	Describe principle, method and applications of ELISA.

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

a.	Outline principle, instrumentation and interferences of Flame Emission spectroscopy.
b.	Discuss mass fragmentation and its rule.
c.	What is chemical shift? Discuss factors influencing chemical shift.
d.	Outline Quadrupole and time of flight mass analyzers.
e.	Discuss the production of X-rays. Explain rotating crystal technique.
f.	What are the advantages of UPLC over HPLC? Discuss instrumentation of HPLC.
g.	Explain principle, instrumentation and applications of DSC.