

ECA

Your Roll No.....

JAMIA HAMDARD
School of Pharmaceutical Education and Research
M. Pharm. I Semester Examination (2023-24)

Subject: Modern Pharmaceutical Analytical Techniques

Maximum Marks: 75

Paper Code: MPA101T/MPB101T/MPC101T/MPG101T/MPH101T/MPL101T/MQA101T

Date: 08-03-2024

Time: Three hours

(Write your Roll No. on the top immediately on receipt of this question paper)

Note: This paper has two Sections; A and B.

Attempt all the two sections.

Section A: Answer all the questions. **Section B:** Answer any 4 out of 6 questions

Abbreviations Used:

CO-Course Outcome, PO- Program Outcome, BTL- Bloom Taxonomy Level: BT level 1-Remember; BT level 2-Understand; BT level 3- Apply; BT level 4- Analyze; BT level 5- Evaluate; BT level 6- Create.

SECTION-A

Answer the following in brief (Attempt all questions)

5x3= 15 Marks

Q. No 1	Question	BTL	CO	PO
(a)	Describe the effects of conjugated double bonds in UV absorption bands of similar & different chromophores taking suitable examples	2	2	1
(b)	Describe the different types of vibrations that occur in the molecules on absorption of IR radiation	3	2	2
(c)	Describe Spin-Spin coupling and Coupling constants and their significance in NMR Spectroscopy	1	2	2
(d)	Describe the Principle of Potentiometry and its use in titrations.	2	2	2
(e)	Describe the Principle and application of Differential Thermal Analysis (DTA)	1	2	2

SECTION B

Long type Questions (Attempt any 4 out of 6)

4x15= 60 Marks

S. No.	Question	BTL	CO	PO
Q. No 2	Explain the difference in Principles of Flame Emission Spectroscopy and Atomic Absorption Spectroscopy. Describe in detail the instruments used in Atomic Absorption Spectroscopy with its applications.	2	2	3
Q. No 3	Describe the Principles of FT-NMR, ¹³ C-NMR Spectroscopy along with their applications.	3	2	2
Q. No 4	Explain the Principle of Electrophoresis, basic components of instruments, and factors affecting separation and applications.	3	2	3
Q. No 5	Describe the Rules for different patterns of Fragmentation in Mass Spectrometry and their applications with respect to determination of Structure of Organic Molecules.	4	2	1
Q. No 6	Describe the Principle of Chromatography, Classification, and applications of different types of Chromatographic Techniques.	3	2	3
Q. No 7	Explain the Principle of FT-IR and its Applications in determining the structure of Organic Molecules.	3	2	3