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Total No. of Pages : 02

Total No. of Questions : 06

M.Pharmacy (Pharmaceutics) (Sem.-1)
MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

Subject Code : MPH-101T

M.Code : 74657

Date of Examination : 10-01-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries EQUAL marks.

1. a) What is Beer-Lambert law? Derive its equation. Describe various factors responsible for its deviation. 10
- b) Arrange the following compounds in increasing orders of their C=O stretching frequency. Support your answer with relevant explanations. 5



2. a) What are the structural pre-requisites for an organic molecule to be fluorescent? Describe various factors affecting fluorescence. 10
- b) What is the principle of RIA? Describe its working with the help of an example. 5
3. a) Define the terms Precessional frequency, Magnetic shielding, Magnetic anisotropy, and Chemical shift. 8
- b) Predict the chemical shifts and multiplicities of various signals possible in ¹H-NMR spectrum of *tert*-butyl propyl ether. 7
4. a) Describe principles of separation by the following techniques: 9
 - i) Paper chromatography
 - ii) Ion-exchange chromatography
 - iii) Affinity chromatography.

- b) Write a note on various detectors used in HPLC with their specific applications. 6
5. a) What is the principle of electrophoretic separations? Write an account on Isoelectric focusing method. 8
- b) Define a crystal. Give a detailed classification of crystals. 7
6. a) Write a detailed account on various types of ionization techniques used in mass spectrometry. 10
- b) Define an isotope peak. Give its significance with an example. 5

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.