Roll No.

Total No. of Pages: 02

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

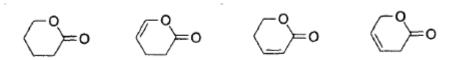
Subject Code: MPH-101T M.Code: 74657

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.
 - b) Arrange the following compounds in increasing orders of their C=0 stretching frequency. Support your answer with relevant explanations.



- 2. a) What are the structural pre-requisites for an organic molecule to be fluorescent? Describe various factors affecting fluorescence,.
 - 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.
 - 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.

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- 5. a) What is the principle of electrophoretic separations? Write an account on Isoelectric focusing method.
 - 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.
 - 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.

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