

PARUL UNIVERSITY
FACULTY OF PHARMACY
B.Pharm Winter 2019-20 Examination

Semester: 7

Subject Code: 08101402

Subject Name: Pharmaceutical Analysis –III

Date: 21/11/2019

Time: 10:00am to 1:00pm

Total Marks: 75

Instructions:

1. Figures to the right indicate full marks.
2. Make suitable assumptions wherever necessary.

Q.1 Essay type Questions. (Any 2 out of 3) (10 marks each) (20)

1. Give the Principle of NMR spectroscopy. Describe the factors affecting Chemical Shift.
2. Write a brief note on FTIR. Discuss Solid Sampling Techniques for IR Spectroscopy.
3. Give the Principle of Mass Spectrometry. Enlist the Ionization techniques used in Mass Spectrometry. Briefly explain MALDI and Chemical Ionization.

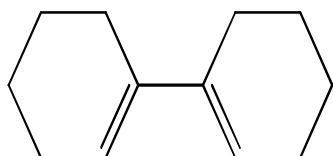
Q.2 Short Essay type Questions. (Any 7 out of 9) (5 marks each) (35)

1. State Beer's Lambert's Law. Derive the equation for Beer's Lambert's Law.
2. Derive the simultaneous equation by Simultaneous Estimation Method for binary dosage form in UV-VIS Spectroscopy.
3. Write a note on Monochromator used in UV-VIS Spectrophotometer.
4. Enlist the different types of Mass Analyzer. Explain in detail Time of Flight Analyzer with its derivation.
5. Write a note on types of Ions and their significance in Mass Spectra.
6. Write a note on Molecular Vibration.
7. Enlist the detectors used in IR Spectroscopy. Explain in detail Bolometer.
8. Write a note on C-13 NMR.
9. Write a note on Liquid Scintillation systems for measurement of Radioactivity. Give the Application of radio nuclides.

Q.3 Answer in short. (2 marks each) (20)

1. Define following terms: A. Bathochromic Shift B. Chromophores.
2. Briefly explain PMT detector used in UV-VIS Spectrophotometer.
3. Differentiate: Dispersive IR and FTIR.
4. Draw the labeled diagram of Mass spectrophotometer.
5. Give the principle of IR Spectroscopy.
6. Give the equation for Hook's law used for calculation of vibrational frequency.
7. Explain Spin-Spin coupling with example.
8. Comment: Tetramethyl Silane (TMS) used as reference in NMR.
9. Explain Shielding & De-Shielding Effect.
10. Calculate the λ_{max} using Woodward-Feiser rule.

A)



B)

