

PARUL UNIVERSITY
FACULTY OF PHARMACY
M.Pharm. Winter 2022 - 23 Examination

Semester: 1**Subject Code: MPL101T****Subject Name: Modern Pharmaceutical Analytical Techniques****Date: 13/03/2023****Time: 10:30am to 1:00pm****Total Marks: 75****Instructions:**

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

Q.1 Essay Type Questions. (any 2 out of 3) (15 Marks Each) (30)

1. Write about Molecular Vibrations in IR Spectra. Explain about characteristics of reference standards used in NMR.
2. Write in detail about different types of ionization techniques of MS. Write about theories of Chromatography.
3. Write about generation of X-Ray and Bragg's law. Draw labeled diagram of FID.

Q.2 Short Essay Type Questions. (any 5 out of 6) (5 Marks Each) (25)

1. Describe any two sampling techniques for IR spectroscopy.
2. Write a short note on Factors influencing chemical shift.
3. Define (i) Parent ion (ii) Fragment ion (iii) Base ion (iv) m/e ratio (v) % Relative abundance
4. Draw labeled diagram of High Performance Liquid chromatography and explain PDA detector.
5. Write a short note on Gel electrophoresis
6. Write a short note on TGA

Q.3 Short Answers. (2 Marks Each) (20)

1. What are the applications of Flame emission spectroscopy?
2. What is Fourier –Transform concept?
3. What is coupling constant?
4. Give difference of Ultra High Performance Liquid chromatography and HPLC.
5. Enumerate electrodes of potentiometry.
6. What is the difference between DSC and DTA?
7. What is Paper electrophoresis?
8. Explain chemical shift?
9. Write about types of column used in GC.
10. What is Mc Lafferty fragmentation rule?