

**PARUL UNIVERSITY**  
**FACULTY OF PHARMACY**  
**M. Pharm. Summer 2018 - 19 Examination**

**Semester: 1**  
**Subject Code: MPH 101T**  
**Subject Name: Modern Pharmaceutical Analytical Techniques**

**Date: 25/04/2019**  
**Time: 10:00am to 1:00pm**  
**Total Marks: 75**

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

1. Explain principle, theory of NMR and factors affecting chemical shift in detail.
2. Discuss Principle, Instrumentation, Working conditions, factors affecting on separation and applications of Gel electrophoresis & Iso electric focusing.
3. Short note on Different types of ionization techniques of MS.

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

1. Discuss chromatogram development techniques of Paper Chromatography.
2. Give a brief note on RIA.
3. Draw a well labeled diagram of High Performance Liquid chromatography and discuss the components in brief.
4. Write a note on Instrumentation of fluorescence spectrophotometer.
5. Write a note on deviations from beer's law.
6. Describe any two sampling techniques for IR spectroscopy.

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

1. Classify chromatographic techniques.
2. What is Affinity chromatography?
3. What is solvent cut-off of UV-Visible spectroscopy? Explain with example.
4. What is Fourier –Transform concept?
5. What are the applications of ion-exchange chromatography?
6. Explain the principle of Flame emission spectroscopy.
7. What are the applications of Atomic absorption spectroscopy?
8. State Bragg's law and give its formula.
9. What is coupling constant and spin-spin coupling?
10. Define: Molecular ion peak, Base peak