

2046
NEP U.G. Common-Inter Disciplinary Course
Second Semester
Chemistry

Paper: Basic Analytical Techniques - II

Time allowed: 3 Hours

Max. Marks: 40

NOTE: Attempt three questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

x-x-x

1. Compulsory Question (Short answer questions)
- i. How is Gradient Elution Development done?
 - ii. Explain the term Frontal Analysis in Chromatography.
 - iii. How can the spots be visualised on a TLC plate?
 - iv. Define Retention factor. 2x5=10
 - v. How can you remove temporary hardness of water.

Unit - I

2. a. Write Van Demeter Equation? Discuss the terms in this equation. 5
- b. What is zone spreading? Discuss the causes of zone spreading? 5
- c. How is TLC plate prepared? How is spotting of the sample and development of TLC done? 5

3. a. Differentiate between ascending and descending paper chromatography. 5
- b. Write a note on activation of adsorbent in Thin Layer Chromatography. 5
- c. How is the column packed for column chromatography? 5

Unit-II

4. a. Discuss the instrumentation in Gas Chromatography? 5
- b. Write a note on Injectors and capillary columns in chromatography. 5
- c. Discuss the detection and quantification of Petrol and Diesel in Column Chromatography 5
5. a. What is the difference between Normal and reverse phase HPLC? 5
- b. How is Mobile phase prepared for HPLC? What factors influence the choice of mobile phase? 5
- c. Write a note on applications of HPLC? 5

x-x-x