

B. Pharm. 4th Year 2nd Semester Examination 2025

Subject: Advanced Instrumentation Techniques

Subject Code: BP811ET

Full Marks: 75

Time: 3 Hr

Answer any 5 questions taking at least 2 questions from each group

Group A

Q1. Write in detail about the chemical analysis by classical and instrumental methods and related limitations. 12 + 3 = 15

Q2. Write in detail about interferences during analytical techniques. Write about the problems regarding selecting analytical techniques. 10 + 5 = 15

Q3. Write short notes on the data domain map. Write in detail about the type of chemical analysis based on selection criteria, sample size, and analytical methods. Discuss various errors related to analytical techniques. 5 + 5 + 5 = 15

Group B

Q4. What is validation? Describe the types of validation. Why is calibration needed for the equipment? How is wave number verification of FTIR done? 2+5+2+6 =15

Q5. Provide a detailed method for the calibration of Gas chromatography. Describe the terms accuracy, precision, linearity, LOD, and LOQ. 10+5 = 15

Q6. a) Draw the spectra for TGA, DTA, and DSC.

b) What are the assemblies needed for DSC? Clarify it with a schematic diagram

c) What will be the calibration frequency for balance, pH meter, UV, FTIR? 6+7+2 =15