

**K-5/2110**

**7401/N**

**Analytical Chemistry-301  
(Semester-III)**

**[Time: Two Hours]**

**[Maximum Marks: 55]**

**Note: Attempt any four questions. All questions carry equal marks.**

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|-------|---|-------|
| I.    | Explain various types of amperometric titrations.   | 13.75 |
| II.   | (a) Distinguish between stratified and random sampling.   | 7     |
|       | (b) Explain the migration and diffusion current.  | 6.75  |
| III.  | Give a detail account of errors in chemical analysis.   | 13.75 |
| IV.   | Write a short note on the following:  |       |
|       | (b) Accuracy and precision.   | 7     |
|       | (c) Reversible and irreversible processes   | 6.75  |
| V.    | Discuss applications of Differential thermal analysis and Differential scanning calorimetry.  | 13.75 |
| VI.   | Explain validity and deviations from Beer's law. Write about photometric titrations and their applications in analytical chemistry. | 13.75 |
| VII.  | Write notes on the following:   |       |
|       | (a) Solvent extraction.   | 7     |
|       | (b) Ion exchange chromatography.  | 6.75  |
| VIII. | (a) Write a short note on thermometric titrations.  | 7     |
|       | (b) Distinguish between colorimetry and spectrophotometry.  | 6.75  |
| IX.   | Write notes on the following:   |       |
|       | (a) Ion pair formation  | 7     |
|       | (b) Tensometry  | 6.75  |