

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARM – SEMESTER – 1 EXAMINATION – SUMMER-2025**

**Subject Code:BP102TP****Date: 19-06-2025****Subject Name: Pharmaceutical Analysis I****Time: 02:30 PM TO 05:30 PM****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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|-------------|-----|--|-----------|
| <b>Q.1</b>  | (a) | Give in detail on different techniques of analysis.  | <b>06</b> |
|             | (b) | Explain merits and demerits of non-aqueous titration.  | <b>05</b> |
|             | (c) | Explain different type of EDTA titration. What are the ideal requirements of metal ion indicator.  | <b>05</b> |
| <b>Q.2</b>  | (a) | Define Error. Classify the error and method of their minimization.   | <b>06</b> |
|             | (b) | Explain Common Ion effect and Diverse ion effect with example.   | <b>05</b> |
|             | (c) | Discuss estimation of Sodium chloride by precipitation titration.  | <b>05</b> |
| <b>Q.3</b>  | (a) | Explain what is Co-Precipitation and Post Precipitation with example.  | <b>06</b> |
|             | (b) | Define Oxidation and Reduction. Give the application of cerimetry with suitable example.   | <b>05</b> |
|             | (c) | Explain the principal and procedure involve in the estimation of calcium gluconate.  | <b>05</b> |
| <b>Q.4</b>  | (a) | Explain the theory of acid base indicator in detail.   | <b>06</b> |
|             | (b) | Write a note on Gravimetry analysis.   | <b>05</b> |
|             | (c) | Give brief note about Volhard's method and modified Volhard's method.  | <b>05</b> |
| <b>Q.5</b>  | (a) | Enumerate the various types of electrodes in potentiometry. Give the working of the Calomel electrode.   | <b>06</b> |
|             | (b) | Explain the term: A) Limiting Current B) Diffusion Current C) Migration Current D) Polarogram E) Half wave Potential                                 | <b>05</b> |
|             | (c) | Difference between Iodometry and Iodimetry titration.  | <b>05</b> |
| <b>Q. 6</b> | (a) | Comment the below:<br>1) Give reason Mohr's titration is carried out in acidic medium.<br>2) Acetic acid is added in preparation of perchloric acid. | <b>06</b> |
|             | (b) | Give the construction and working of DME.  | <b>05</b> |
|             | (c) | Explain the estimation of Barium Sulphate.   | <b>05</b> |
| <b>Q.7</b>  | (a) | Give a brief note on construction and working of the Glass Electrode. What are the advantages of the glass electrode.                                | <b>06</b> |
|             | (b) | Define the following:<br>1) Molarity 2) Mole fraction 3) Normality 4) Precision 5) Acidimetry  | <b>05</b> |
|             | (c) | What is Buffer Solution. Derive Henderson- Hasselbalch equation for finding pH of buffer solution.   | <b>05</b> |