

**B.Pharm (Second Semester) (C.B.S.) Examination**  
**PHARMACEUTICAL ANALYSIS—I**  
**Paper—4**

Time : Three Hours]

[Maximum Marks : 80

- N.B. :**— (1) Question No. **1** is compulsory.  
 (2) Solve any **four** questions from the remaining.  
 (3) Draw neat labeled diagram wherever necessary.  
 (4) Assume suitable data wherever necessary.

1. Solve any **five** of the following : 4×5=20
  - (a) Define ligands. Classify them with examples.
  - (b) Write about primary and secondary standards.
  - (c) Why is magnesium added in calcium determination by complexometry ?
  - (d) Give the preparation and standardization of 0.1 M perchloric acid.
  - (e) Comment on the role of glycerin in the assay of boric acid.
  - (f) Compare and contrast Iodimetry and Iodometry.
  - (g) Define Normality and Molarity with suitable examples. Compare their merits and demerits.
2.
  - (a) Classify non-aqueous solvents with suitable examples. 10
  - (b) Explain levelling and differentiating effect of non-aqueous solvent. Write assay of Ephedrine hydrochloride by non-aqueous titration. 5
3.
  - (a) What is gravimetric analysis ? Explain unit operations involved in gravimetric analysis. 10
  - (b) Discuss in brief co-precipitation and post-precipitation. 5
4.
  - (a) Write the theory of adsorption indicators. 7
  - (b) Explain Volhard's method. Give the method for preparation and standardization of 0.1 M silver nitrate. 8
5.
  - (a) Explain theories of neutralisation indicator. 7
  - (b) Define accuracy, precision and error. Give the classification of errors and write in short methods to minimise them. 8
6.
  - (a) Explain types of EDTA titration and write the factors affecting stability of complex formed. 10
  - (b) Discuss the theory of metal ion indicator. 5
7. Write a note on Redox indicators with examples. Discuss about ceric ammonium sulphate titration. Give the method for preparation and standardization of 0.02 M potassium permanganate. 15