

Contents

Preface

v

Syllabus

ix

I. Introduction to Limit Test	1
1. Limit Test for Chlorides	2
2. Limit Test for Sulphates	3
3. Limit Test for Iron	4
4. Limit Test for Heavy Metals	5
II. Introduction to Identification Tests for Anions and Cations	7
5. Identification of Magnesium Cation and Sulphate Anion in Magnesium Sulphate	10
6. Identification of Sodium Cation and Bicarbonate Anion in Sodium Bicarbonate	13
7. Identification of Calcium Cation and Gluconate Anion in Calcium Gluconate	16
8. Identification of Ferrous Cation and Sulphate Anion in Ferrous Sulphate	19
III. Introduction to Fundamentals of Volumetric Analysis	23
9. Standardization of Sodium Hydroxide Solution	24
10. Standardization of Potassium Permanganate Solution	26
IV. Introduction to Assay	29
11. Assay of Ferrous Sulphate by Redox Titration	30
12. Assay of Calcium Gluconate by Complexometric Titration	32
13. Assay of Sodium Chloride by Modified Volhard's Method	34
14. Assay of Ascorbic Acid by Iodometry	36
15. Assay of Ibuprofen by Alkalimetry	38
V. Introduction to Fundamentals of Preparative Organic Chemistry	41
16. Determination of Melting Point	42
17. Determination of Boiling Point	44
VI. Introduction to Preparation of Organic Compounds	45
18. Preparation of Benzoic Acid from Benzamide	46
19. Preparation of Picric Acid from Phenol	48
VII. Introduction to Identification and Test for Purity of Pharmaceuticals	51
20. Identification and Test for Purity of Aspirin	52

- 21. Identification and Test for Purity of Caffeine 53
- 22. Identification and Test for Purity of Paracetamol 54
- 23. Identification and Test for Purity of Sulphanilamide 55

VIII. Introduction to Systematic Qualitative Analysis of Organic Compounds

57

- 24. Detection of Extra Element and Functional Group in Given Unknown Sample I 62
- 25. Detection of Extra Element and Functional Group in Given Unknown Sample II 64
- 26. Detection of Extra Element and Functional Group in Given Unknown Sample III 66
- 27. Detection of Extra Element and Functional Group in Given Unknown Sample IV 68