

## Xi Chemistry Practical Procedure Volumetric Analysis

This Fourth Edition has been thoroughly revised and updated to take account of international developments in pharmaceutical chemistry and to maintain the position of Practical Pharmaceutical Chemistry as the leading University textbook in the field of pharmaceutical analysis and quality control. Part 2 deals with physical techniques of analysis for more advanced courses. It gives a broad coverage of the most widely used techniques in quantitative chromatography. The treatment of spectroscopy and radiopharmaceuticals has also been increased. There are additional chapters on the contribution and role of physical methods of analysis in the various stages of drug development; and a series of workshop-style exercises, illustrating the application of spectroscopic techniques in structural elucidation and verification of identity. Users of the two volumes will welcome the internationalisation of the text, with examples based on drugs and dosage forms that are widespread and in common use in human medicine in Britain, continental Europe and North America. Additionally there is some reference to veterinary pharmaceuticals where they provide appropriate examples.

ISC Practical Chemistry Class XII has been thoroughly revised as per the latest syllabus for ISC (Class XII) prescribed by the Council for the Indian School Certificate Examinations (CICSE), New Delhi.

Proficiency in volumetric analysis is a key skill for chemists in research and industry. This work seeks to 'modernise' approaches to volumetric analysis, by relating practical work to vocationally-relevant topics, whilst maintaining the rigor required for satisfactory performance in practical examinations. Written by someone who has experienced both teaching and working as a research chemist, this up to date textbook on practical volumetric analysis will provide the theoretical chemistry associated with volumetric analysis supported by a selection of practicals. There will also be suggestions for a number of investigations which could form the basis of project-based learning or coursework, particularly for those pursuing vocational science courses. Section 1 will consist of three theory chapters, covering preliminary concepts (fundamentals of chemistry, essential quantitative chemistry and concepts of statistics). Section 2 will be divided into four chapters, based on the four main divisions of volumetric analysis (acid-base titrimetry, redox titrimetry, precipitation titrimetry and complexometric titrimetry). Each chapter in this section will start with a review of essential theory, with worked examples and illustrations where appropriate, and end with a selection of laboratory practicals. Each chapter will also contain a number of open-ended investigations, for use in project-based learning or coursework. Section 3 will address more advanced topics and be divided into four chapters (volumetric analysis in industry, further statistical concepts, mathematics of titrimetry and advanced titrimetry). Practical work and suggestions for further reading will be included where appropriate. Practical Volumetric Analysis is suitable for students taking modules in introductory chemistry and analytical chemistry on undergraduate degree courses as well as providing guidance to non-specialists teaching chemistry.

- Chapter wise and Topic wise introduction to enable quick revision.
- Coverage of latest typologies of questions as per the Board latest Specimen papers
- Mind Maps to unlock the imagination and come up with new ideas.
- Concept videos to make learning simple.
- Latest Solved Paper with Topper's Answers
- Previous Years' Board Examination Questions and Marking scheme Answers with detailed explanation to facilitate exam-oriented preparation.
- Examiners comments & Answering Tips to aid in exam preparation.
- Includes Topics found Difficult & Suggestions for students.
- Dynamic QR code to keep the students updated for 2021 Exam paper or any further CISCE notifications/circulars

A. Surface Chemistry 1. To prepare colloidal solution (sol) of starch, 2. To prepare a colloidal solution of egg albumin 3. To prepare colloidal solution of gum, 4. To prepare colloidal solution of aluminium hydroxide  $[Al(OH)_3]$ , 5. To prepare colloidal solution of ferric hydroxide  $[Fe(OH)_3]$ , 6. To prepare colloidal solution of arsenious sulphide  $[As_2S_3]$ , 7. To purify a freshly prepared sol by dialysis, 8. To compare the effectiveness of different common oils (Castor oil, cotton seed oil, coconut oil, kerosene oil, mustard oil) in forming emulsions. Viva-Voce B. Chemical Kinetics 1. To study the effect of concentration on the rate of reaction between sodium thiosulphate and hydrochloric acid, 2. To study the effect of temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid, 3. To study the rate of reaction of iodide ions with hydrogen peroxide at different concentrations of iodide ions, 4. To study the rate of reaction between potassium iodate ( $KIO_3$ ) and sodium sulphite ( $Na_2SO_3$ ) using starch solution as indicator Viva-Voce C. Thermochemistry 1. Determine the enthalpy of dissolution of copper sulphate ( $CuSO_4 \cdot 5H_2O$ ) in water at Room temperature, 2. To determine the enthalpy of neutralization of the reaction between HCl and NaOH, 3. To determine enthalpy change during the interaction between acetone and chloroform Viva-Voce D. Electrochemistry 1. To study the variation of cell potential in  $Zn|Zn^{2+}||Cu^{2+}|Cu$ , with change in concentration of electrolytes ( $CuSO_4$  or  $ZnSO_4$ ) at room temperature Viva-Voce E. Chromatography 1. To separate the coloured components (pigment) present in the given extract of leaves and flowers by ascending paper chromatography and find their  $R_f$  values, 2. To separate the coloured components present in the mixture of red and blue inks by ascending paper chromatography and find their  $R_f$  values, 3. To separate  $Co^{2+}$  and  $Ni^{2+}$  ions present in the given mixture by using ascending paper chromatography and determine their  $R_f$  values Viva-Voce F. Preparation of Inorganic Compounds 1. Preparation of double salt of ferrous ammonium sulphate (Mohr's salt) from ferrous sulphate and ammonium sulphate, 2. To prepare a pure sample of potash alum (fitkari), 3. Preparation of crystals of potassium ferric oxalate or potassium trioxalato ferrate (III) Viva-Voce G. Preparation of Organic Compounds 1. Preparation of iodoform from ethyl alcohol or acetone, 2. Preparation of acetanilide in laboratory, 3. Preparation of *p*-Naphthol aniline dye, 4. To prepare a pure sample of dibenzalacetone, 5. To prepare a pure sample of *p*-nitro acetanilide Viva-Voce H. Tests for the Functional Groups Present in Organic Compounds Viva-Voce I. Study of Carbohydrates, Fats and Proteins 1. To study simple reactions of carbohydrate, 2. To study simple reactions of fats, 3. To study simple reactions of proteins, 4. To investigate presence of carbohydrates, fats and proteins in food stuffs Viva-Voce J. Volumetric Analysis 1. To prepare 250 ml of M/10 solution of oxalic acid, 2. To prepare 250 ml of M/10 solution of ferrous ammonium sulphate, 3. Prepare M/20 solution of oxalic acid, with its help find out the molarity and strength of the given solution of potassium permanganate, 4. Prepare M/20 solution of Mohr's salt, using this solution determine the molarity and strength of potassium permanganate solution Viva-Voce K. Qualitative Analysis Viva-Voce INVESTIGATORY PROJECTS 1. To study the presence of oxalate ions in guava fruit at different stages of ripening. 2. To study the quantity of casein present in different samples of milk. 3. Preparation of soyabean milk and its comparison with natural milk with respect to curd formation, effect of temperature etc. 4. To study the effect of potassium bisulphite as food preservative at various concentrations. 5. To study the digestion of starch by salivary amylase and the effect of pH and temperature on it. 6. To study and compare the rate of fermentation of the following materials—wheat flour, gram flour, potato juice and carrot juice. 7. To extract essential oils present in saunf (aniseed), ajwain (corum), illaichi (cardomom). 8. To detect the presence of adulteration in fat, oil and butter, 9. To investigate

the presence of  $\text{NO}_2^-$  in brinjal.

Highly Useful for Various Engineering and Medical Competitive Examinations.

Across All Boards, ICSE/ISC Boards

ISC Chemistry Book 1

Includes list of members, 1882-1902 and proceedings of the annual meetings and various supplements.

Comprehensive Practical Chemistry XI Laxmi Publications ISC Practical Chemistry Class XI S. Chand Publishing

This clearly written, class-tested manual has long given students hands-on experience covering all the essential topics in general chemistry.

Stand alone experiments provide all the background introduction necessary to work with any general chemistry text. This revised edition

offers new experiments and expanded information on applications to real world situations.

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