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# Lab Manual Chemistry Class Xii Ncert

**Xiaolong Qi**



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100% updated curriculum Crisp Revision with Topic wise Revision Notes Smart Mind Maps Extensive Practice with 3000 Questions Board Marking Scheme Answers to give you 3000 chances to become a champ Concept Clarity with 1000 Concepts 50 Concept Videos for you to learn the cool way with videos and mind blowing concepts NEP 2020 Compliance with Competency Based Questions for you to be on the cutting edge of the coolest educational trends **Practical/Laboratory Manual Chemistry Class XII based on NCERT guidelines by Dr. S. C. Rastogi, Er. Meera Goyal** Dr. S. C. Rastogi ,Er. Meera Goyal,2020-06-22

**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  $\text{Al(OH)}_3$
- 5 To prepare colloidal solution of ferric hydroxide  $\text{Fe(OH)}_3$
- 6 To prepare colloidal solution of arsenious sulphide  $\text{As}_2\text{S}_3$
- 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  $\text{KIO}_3$  and sodium sulphite  $\text{Na}_2\text{SO}_3$  using starch solution as indicator

**Viva Voce C Thermochemistry**

- 1 Determine the enthalpy of dissolution of copper sulphate  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  in water at Room temperature
- 2 To determine the enthalpy of neutralization of the reaction between  $\text{HCl}$  and  $\text{NaOH}$
- 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  $\text{Zn}|\text{Zn}^{2+}||\text{Cu}^{2+}|\text{Cu}$  with change in concentration of electrolytes  $\text{CuSO}_4$  or  $\text{ZnSO}_4$  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  $\text{Co}^{2+}$  and  $\text{Ni}^{2+}$  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 cardamom 8 To detect the presence of adulteration in fat oil and butter 9 To investigate the presence of NO<sub>2</sub> in brinjal

*Report - Educational Research and Innovations Committee, National Council of Educational Research and Training National Council of Educational Research and Training (India), 1982* Annual Report National Council of Educational Research and Training (India), 2005 *Practical/Laboratory Manual Chemistry Class XI based on NCERT guidelines by Dr. S. C. Rastogi & Er. Meera Goyal* Dr. S. C. Rastogi, Er. Meera Goyal, 2020-06-23 An Excellent Book in Accordance with the latest syllabus for Class 11 Prescribed by CBSE NCERT and Adopted by Various State Education Boards A Basic Laboratory Techniques 1 To cut a glass tube or glass rod 2 To bend the glass rod at an angle 3 To draw a glass jet from a glass tube 4 To bore a cork and fit a glass tube into it B Characterisation and Purification of Chemical Substances 1 To determine the melting point of the given unknown organic compound and its identification simple laboratory technique 2 To determine the boiling point of a given liquid when available in small quantity simple laboratory method 3 To prepare crystals of pure potash alum K<sub>2</sub>SO<sub>4</sub> Al<sub>2</sub> SO<sub>4</sub> 3 24H<sub>2</sub>O from the given impure sample 4 To prepare the pure crystals of copper sulphate from the given crude sample 5 To prepare pure crystals of benzoic acid from a given impure sample C Measurement of pH Values 1 To determine the pH value of vegetable juices fruit juices tap water and washing soda by using universal pH paper 2 To determine and compare the pH values of solutions of strong acid HCl and weak acid CH<sub>3</sub>COOH of same concentration 3 To study the pH change in the titration of strong base Vs strong acid by using universal indicator paper 4 To study the pH change by common ion CH<sub>3</sub>COO<sup>-</sup> ion in case of weak acid CH<sub>3</sub>COOH 5 To determine the change in pH value of weak base NH<sub>4</sub>OH in presence of a common ion NH<sub>4</sub><sup>+</sup> D Chemical Equilibrium 1 To study the shift in equilibrium between ferric ions and thiocyanate ions by changing the concentrations of either of the ions 2 To study the shift in equilibrium between Co H<sub>2</sub>O 6 2 and Cl<sup>-</sup> ions by changing the concentrations of either of the ions E Quantitative Analysis 1 To prepare M 10 oxalic acid solution by direct weighing method 2 To prepare M 10 solution of sodium carbonate by direct weighing method 3 To determine the strength of given solution of sodium hydroxide by titrating it against N 10 or M 20 solution of oxalic acid 4 To determine the strength of a given solution of hydrochloric acid by titrating it against a standard N 10 or M 20 sodium

carbonate solution F Qualitative Analysis 1 Analysis of Anions 2 Analysis of Cations G Detection of Elements in Organic Compounds 1 To detect the presence of nitrogen sulphur and halogens in a given organic compound by Lassaigne's test 2 To detect the presence of nitrogen sulphur and halogens in the given organic compound sample number by Lassaigne's test

**INVESTIGATORY PROJECTS** A Checking of Bacterial Contamination in Water 1 To check the bacterial contamination in drinking water by testing sulphide ions B Methods of Water Purification 1 To purify water from suspended impurities by using sedimentation 2 To purify water by boiling 3 To purify water by distillation method 4 To purify water by reverse osmosis technique 5 To purify water by GAC method 6 To purify water by bleach treatment 7 To purify water by oxidising agent 8 To purify water by ozone treatment method C Water Analysis 1 To test the hardness of different water samples D Foaming Capacity of Various Soaps 1 To compare the foaming capacity of different washing soaps 2 To study the effect of addition of sodium carbonate on foaming capacity of washing soap E Tea Analysis 1 To study the acidity of different samples of tea leaves tea by using pH paper F Analysis of Fruits and Vegetable Juices 1 To analyse the fruit and vegetable juices for the constituent present in them G Rate of Evaporation 1 To study the rate of evaporation of different liquids H Effect of Acids and Bases on Tensile Strength of Fibres 1 To compare the tensile strength of natural fibres and synthetic fibres 2 To study the effect of acids and bases on tensile strength of different fibres Log Antilog Table

**Indian National Bibliography** B. S. Kesavan, 2009-05 *Annual Report* India. Department of Information Technology, 2010 **The Indian National Bibliography** B. S. Kesavan, 2009-04 **N.I.E. Newsletter**, 1969 **Practical/Laboratory Manual Chemistry Class XII based on NCERT guidelines** Dr. S. C. Rastogi, Er. Meera Goyal, 2022-02-25 An Excellent Book in Accordance with the latest syllabus for class XII Prescribed by CBSE NCERT and Adopted by Various State Education Boards

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**Viva Voce** E

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Viva Voce K Qualitative Analysis

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Practical/Laboratory Manual  
Biology Class XII based on NCERT guidelines by Dr. Sunita Bhagia & Megha Bansal  
 Dr. Sunita Bhagia ,Megha Bansal,2020-06-22

A List of Experiments 1 Study pollen germination on a slide 2 Collect and study soil from at least two different sites and study them for texture moisture content pH and water holding capacity Correlate with the kinds of plants found in them 3 Collect water from two different water bodies around you and study them for pH clarity and presence of any living organism 4 Study the presence of suspended particulate matter in air at two widely different sites 5 Study the plant population density by quadrat method 6 Study the plant population frequency by quadrat method 7 Prepare a temporary mount of onion root tip to study mitosis 8 Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch 9 Isolate DNA from available plant material such as spinach green pea seeds papaya etc

B Study



observation of the following Spotting 1 Flowers adapted to pollination by different agencies wind insects birds 2 Pollen germination on stigma through a permanent slide 3 Identification of stages of gamete development i e T S of testis and T S of ovary through permanent slides from grasshopper mice 4 Meiosis in onion bud cell or grasshopper testis through permanent slides 5 T S of blastula through permanent slides Mammalian 6 Mendelian inheritance using seeds of different colour sizes of any plant 7 Prepare pedigree charts of any one of the genetic traits such as rolling of tongue blood groups ear lobes widow s peak and colour blindness 8 Controlled pollination emasculation tagging and bagging 9 Common disease causing organisms like Ascaris Entamoeba Plasmodium any fungus causing ringworm through permanent slides or specimens Comment on symptoms of diseases that they cause 10 Two plants and two animals model virtual images found in xeric conditions Comment upon their morphological adaptations 11 Two plants and two animals models virtual images found in aquatic conditions Comment Content EXPERIMENTS 1 To study pollen germination on slide 2 To study the texture moisture content pH and waterHolding Capacity of soils collected from different sites 3 To collect water from different water bodies and study them for pH Clarity and presence of living organisms 4 To study the presence of suspended particulate matter in air at different sites 5 To study plant population density by quadrat method 6 To study plant population frequency by quadrat method 7 To study various stages of mitosis in root tip of onion by preparing slide in acetocarmine 8 To study effect of different temperature and three different pH onthe activity of salivary amylase 9 To study the isolation of DNA from available plant material such as spinach green pea seeds papaya etc SPOTTING 1 Pollination in flowers 2 Pollen germination 3 Slides of mammal tissues 4 Meiosis cell division 5 T S of Blastula 6 Mendel s inheritance laws 7 Pedigree chart 8 Controlled pollination 9 Common disease causing organisms 10 Xerophytic adaptation 11 Aquatic adaptation

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