

Chemistry Project Work Investigatory Project

• Strictly as per the Full syllabus for Board 2022-23 Exams • Includes Questions of the both - Objective & Subjective Types Questions • Chapterwise and Topicwise Revision Notes for in-depth study • Modified & Empowered Mind Maps for quick learning • Concept videos for blended learning • Previous Years' Examination Questions and Answers with detailed explanation to facilitate exam-oriented preparation. • Commonly Made Errors & Answering Tips to aid in exam preparation. • Includes Topics found Difficult & Suggestions for students. • Includes Academically important Questions (AI) • Dynamic QR code to keep the students updated for 2023 Exam paper or any further ISC notifications/circulars

The CBSE has made certain changes in the assessment structure from the session 2019-20 onwards. In the new scheme of examination, CCE and term system has been replaced with the Internal Assessment & Single Annual Exam by CBSE itself. Single exam conducted by CBSE will carry 80 marks whereas 20 marks are left to the schools for internal assessment. CBSE has issued detailed guidelines on how the internal marks will be divided among different activities. From 2019 onwards, there will be internal choices in board examinations with increased internal options in the question paper. Considering this change, now a student has to prepare accordingly for board examinations. The new assessment format brought with it excitement as well as anxiety. And to help them prepare and excel in their CBSE board examination, Career Point Kota has developed a series of 10 Most Likely Question Papers with Solutions. The Key Features of Most Likely Question Papers with Solutions Series : New OBJECTIVE TYPE question in each paper. Syllabus of CBSE 2019-20. Based on the latest CBSE Syllabus & Pattern. Mind map of each chapter is given to visualize and help acquire a better understanding. Important terms, facts, formulae and quick revision tips are given. Covers questions asked in previous year board exams. Toppers Answer Sheet as released by CBSE to understand the scoring technique. We hope this book will gratify students' need for the new CBSE pattern board exam and smoothen their path to success. We wish to utilize the opportunity to place on record our special thanks to all the members of the Content Development team for their efforts to create this wonderful book.

This product covers the following: • 10 Sample Papers-5 Solved & 5 Self-Assessment Papers strictly designed as per the latest CBSE Sample Paper released on 16th September 2022 • 2023 Board Sample Paper analysis • On-Tips Notes & Revision Notes for Quick Revision • Mind Maps & Mnemonics with 1000+concepts for better learning • 500+Questions for practice

Oswaal CBSE Question Bank Class 12 Physics, Chemistry & Biology (Set of 3 Books) (For 2022-23 Exam)

Guide to the Experimental Projects of the Dominion Experimental Farms

Oswaal ISC Question Bank Class 12 Physics, Chemistry, Mathematics, English Paper-1 & 2 (Set of 5 Books) (For 2023 Exam)

Oswaal CBSE Sample Question Papers Class 12 Chemistry (For 2023 Exam)

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With the NEP 2020 and expansion of research and knowledge has changed the face of education to a great extent. In the Modern times, education is not just constricted top the lecture method but also includes a practical knowledge of certain subjects. This way of education helps a student to grasp the basic concepts and principles. Thus, trying to break the stereotype that subjects like Physics, Chemistry and Biology means studying lengthy formulas, complex structures, and handling complicated instruments, we are trying to make education easy, fun, and enjoyable.

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 [K2SO4.Al2(SO4)3.24H2O] 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 (CH3COOH) 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 (CH3COO- ion) in case of weak acid (CH3COOH). 5. To determine the change in pH value of weak base (NH4OH) in presence of a common ion (NH4+), (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(H2O)6]2+ and Cl- 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

Oswaal CBSE Question Bank Class 11 Physics, Chemistry, Math2022-23 are based on latest & full syllabus The CBSE Question Bank Class 11 Physics, Chemistry, Math2022-23 Includes Term I Exam paper 2021+Term II CBSE Sample paper+ Latest Topper Answers The CBSE Books Class 11 2022 -23 comprises Revision Notes: Chapter wise & Topic wise The CBSE Question Bank Class 11 Physics, Chemistry, Math2022-23 includes Exam Questions: Includes Previous Years Board Examination questions (2013-2021) It includes CBSE Marking Scheme Answers: Previous Years' Board Marking scheme answers (2013-2020) The CBSE Books Class 11 2022 -23 also includes New Typology of Questions: MCQs, assertion-reason, VSA ,SA & LA including case based questions The CBSE Question Bank Class 11 Physics, Chemistry, Math2022-23 includes Toppers Answers: Latest Toppers ' handwritten answers sheets Exam Oriented Prep Tools Commonly Made Errors & Answering Tips to avoid errors and score improvement Mind Maps for quick learning Concept Videos for blended learning The CBSE Question Bank Class 11 Physics, Chemistry, Math2022-23 includes Academically Important (AI) look out for highly expected questions for the upcoming exams

Oswaal ISC Sample Question Papers Semester 2, Class 12 (Set of 5 Books) English 1 & 2, Physics, Chemistry, Mathematics (For 2022 Exam)

Chemical Education in the Seventies

Teaching Chemistry Around the World

Chemistry Lab Manual

Comprehensive Practical Chemistry XII

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 [As2S3], 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 (KIO3) and sodium sulphite (Na2SO3) using starch solution as indicator Viva-Voce C. Thermochemistry 1.Determine the enthalpy of diss solution of copper sulphate (CuSO4.5H2O) 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/Zn2+||Cu2+|Cu, with change in concentration of electrolytes (CuSO4 or ZnSO4) 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 RF values, 2. To separate the coloured components present in the mixture of red and blue inks by ascending paper chromatography and determine their RF values Viva-Voce F. Preparation of Inorganic Compounds 1.Preparration 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 (fittakar), 3. Preparation of crystals of potassium ferric oxalate or potassium trioxalate ferrate (III) Viva-Voce G. Preparation of Organic Compounds 1. Preparation of iodoform from ethyl alcohol or acetone, 2. Preparation of acetylilide in laboratory, 3. Preparation of b-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), ilaichi (cardamom),8. To detect the presence of adulteration in fat, oil and butter, 9.To investigate the presence of NO2- in brinjal.

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• 15 Sample Papers in each subject, 5 solved & 10 Self-Assessment Papers • Includes all latest typologies of Questions as specified in the latest CBSE Board Sample Paper for Term-II Exam released on 14th January 2022 • On-Tips Notes & Revision Notes for Quick Revision • Mind Maps for better learning

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Practical/Laboratory Manual Chemistry Class - XI

Environmental Nanotechnology

Oswaal CBSE Chapterwise & Topicwise Question Bank Class 11 Chemistry Book (For 2022-23 Exam)

CBSE Class 12th Chemistry (10 Most Likely Question Papers with Solution) By Career Point Kota

This Book has Been Especially Written For Class XII Students Under 10+2 Pattern Of Education According To The Syllabi Prescribed By The Cbse And Other States Boards. This Book Will Help The Students In Acquiring Correct Skills In Practicals And Various Techniques Of All Laboratory Experiments.Salient Features • An Introduction To The Book Is Given. This Describes The Laboratory Apparatus And Instructions And Precautions For Working In The Laboratory. • Simple Language And Lucid Style. • Adequate Number Of Illustrations To Explain And To Clarify The Use Of Various Apparatus Used In The Laboratory. • Theoretical Aspects Of Each Equipment Have Been Discussed Along With Experiments. • In Volumetric Analysis (Inorganic And Organic), Various Tests Have Been Given In A Systematic Way.Specimen Recordings Of Experiments Are Given To Help The Students To Record On Their Notebooks. • Viva-Voice Questions Have Been Included In Each Chapter. • A Fairly Large Number Of Investigatory Projects Covering Various Topics Are Given. Selection Of Projects Is Carefully Made Which Can Be Easily Performed. • An Appendix Describing Various Chemical Hobbies Is Given Which Will Be Extremely Helpful To The Students For The Development Of Chemical Hobbies, Understanding The Basic Principles Involved And The Chemistry Of Various Hobbies. • An Appendix Describing Some Typical Chemical Exhibits Is Also Given. This Will Help The Students To Participate In The Science Fairs Organized By Various Agencies. These Experiments Will Cultivate Interest Among The Students For Learning Chemistry. • An Appendix For The Solubility'S Of Various Salts, Atomic Weights, Preparation Of Various Reagents, Indicator Papers And The First Aid To Be Administered In Case Of Accidents Is Given. The Syllabi Prescribed For Class XII Students Under 10+2 Pattern Along With Distribution Of Marks Is Also Given.

As teachers we often tend to expect other countries to teach chemistry in much the same way as we do, but educational systems differ widely. At Bielefeld University we started a project to analyse the approach to chemical education in different countries from all over the world. Teaching Chemistry around the World. 25 countries have participated in the project. The resulting country studies are presented in this book. This book may be seen as a contribution to make the structure of chemistry teaching in numerous countries more transparent and to facilitate communication between atomic weights, and tertiary levels. In the seventies discusses the major innovations and programs in chemical education from various countries. The book provides a discourse regarding the aspects of chemistry curriculum of primary, secondary, and college level, which includes laboratory work, examination reforms, and training of teachers. The text also discusses information regarding interactions between chemistry and society, such as contributions made by the chemical industry for the education of students at the primary, secondary, and tertiary levels.

The selection will appeal to a wide variety of readers, particularly to teachers of general science and chemistry in industrialized and developing countries. Chapter Navigation Tools • CBSE Syllabus : Strictly as per the latest CBSE Syllabus dated: April 21, 2022 Cir. No. Acad-48/2022 Latest updations: 1. Term I &Term II Solved Papers 2022-23 (all sets of Delhi & Outside Delhi) 2. Toppers Answers -2020 Revision Notes: Chapter wise & Topic wise • Exam Questions: Includes Previous Years Board Examination questions (2013-2021) • CBSE Marking Scheme Answers: Previous Years' Board Marking scheme answers (2013-2020) with detailed explanation to facilitate exam-oriented preparation. • New Typology of Questions: MCQs, assertion-reason, VSA ,SA & LA including case based questions • Toppers Answers: Latest Toppers ' handwritten answers sheets • Questions from Board Question Bank -2021 • Mind Maps and concept videos to make learning simple. • Coverage of Chapter wise complete NCERT textbook + NCERT Exemplar questions with answers. • Dynamic QR code to keep the students updated for any further CBSE notifications/circulars • Commonly Made Errors & Answering Tips to avoid errors and score improvement • Self Assessment Tests & Practice Papers for self -evaluation

Lab Manual Chemistry Class XII -by Dr. K. N. Sharma, Dr. Subhash Chandra Rastogi, Er. Meera Goyal (SBPD Publications)

Hard Bound Lab Manual Chemistry

Oswaal CBSE Question Bank Class 12 Physics, Chemistry & Mathematics (Set of 3 Books) (For 2022-23 Exam)

Oswaal CBSE One for All Class 12 Physics, Chemistry & Mathematics (Set of 3 books) (For 2023 Exam)

Oswaal CBSE One for All, Chemistry, Class 12 (For 2023 Exam)

Explore the Properties of Today's Widely Used Nanomaterials– and Assess Their Potentially Harmful Effects on the Environment Environmental Nanotechnology is the first book to assist you in both understanding the properties of new nanomaterial-centered technology and assessing the potentially harmful effects these materials may have on the environment. Written by a team of 29 leading experts from around the world, this comprehensive book presents cutting-edge coverage of the fabrication, characterization, and measurement of nanomaterials...emerging markets for nanomaterials...nanotechnologies in the energy industry...nanotechnologies for environmental quality...nanotechnology transport and fate in the environment...toxicological impacts of nanomaterials...and much more. Filled with detailed illustrations, Environmental Nanotechnology features: State-of-the-art techniques for the characterization and measurement of nanomaterials in the environment Nanotechnologies for energy production, storage, and distribution In-depth analyses of the ecotoxicological impacts of nanomaterials New methods for developing nanomaterials with less environmental risk Inside This Landmark Environmental Engineering Guide • Nanomaterials: New Challenges and Opportunities • Fabrication of Nanomaterials • Characterization and Measurement of Nanomaterials • Emerging Markets for Nanomaterials • Nanomaterial-Enabled Technologies for Environmental Quality • Nanomaterial Transport and Fate in the Environment • Ecotoxicological Impacts of Nanomaterials • Toxicological Impacts of Nanomaterials

Chapter Navigation Tools • CBSE Syllabus : Strictly as per the latest CBSE Syllabus dated: April 21, 2022 Cir. No. Acad-48/2022 Latest updations: 1. All new topics/concepts/chapters were included as per the latest curriculum. 2. Self Assessment papers for practice • Revision Notes: Chapter wise & Topic wise • Exam Questions: Includes Previous Years KVX exam questions • New Typology of Questions: MCQs, VSA,SA & LA including case based questions • NCERT Corner: Fully Solved Textbook Questions (Exemplar Questions in Physics, Chemistry, Biology) Exam Oriented Prep Tools • Commonly Made Errors & Answering Tips to avoid errors and score improvement • Mind Maps for quick learning • Concept Videos for blended learning • Academically Important (AI) look out for highly expected questions for the upcoming exams • Mnemonics for better memorisation • Self Assessment Papers Unit wise test for self preparation

This product covers the following: 10 Sample Papers in each subject. 5 solved & 5 Self-Assessment Papers All latest typologies Questions. On-Tips Notes & Revision Notes for Quick Revision Mind Maps for better learning

Oswaal CBSE Question Bank Class 12 English, Physics, Chemistry & Biology (Set of 4 Books) (For 2022-23 Exam)

Applications and Impacts of Nanomaterials

SBPD Publications

Comprehensive Practical Chemistry XI

CBSE MCQs Chapterwise For Term I & II, Class 12, Chemistry

Lab Manuals

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Important (AI) look out for highly expected questions for the upcoming exams

Chemistry Lab Manual Class XI | follows the latest CBSE syllabus and other State Board following the CBSE Curriculum.

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Comprehensive Experimental Chemistry

Practical/Laboratory Manual Chemistry Class XI based on NCERT guidelines by Dr. S. C. Rastogi & Er. Meera Goyal

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Lab Manual

Strictly as per the new term-wise syllabus for Board Examinations to be held in the academic session 2021-22 for class 12. Multiple Choice Questions based on new typologies introduced by the board– Stand-Alone MCQs, MCQs based on Assertion-Reason, Case-based MCQs. Include Questions from CBSE official Question Bank released in April 2021 Answer key with Explanations Sample Paper on the latest pattern of Term – 1 exam. Chapter Navigation Tools • CBSE Syllabus : Strictly as per the latest CBSE Syllabus dated: April 21, 2022 Cir. No. Acad-48/2022 Latest updations: 1. Term I &Term II Solved Papers 2022-23 (all sets of Delhi & Outside Delhi) 2. Toppers Answers -2020 Revision Notes: Chapter wise & Topic wise Exam Questions: Includes Previous Years Board Examination questions (2013-2021) • CBSE Marking Scheme Answers: Previous Years' Board Marking scheme answers (2013-2020) with detailed explanation to facilitate exam-oriented preparation. • New Typology of Questions: MCQs, assertion-reason, VSA ,SA & LA including case based questions • Toppers Answers: Latest Toppers' handwritten answers sheets Questions from Board Question Bank -2021 Mind Maps and concept videos to make learning simple. • Coverage of Chapter wise complete NCERT textbook + NCERT Exemplar questions with answers. Dynamic QR code to keep the students updated for any further CBSE notifications/circulars Commonly Made Errors & Answering Tips to avoid errors and score improvement Self Assessment Tests & Practice Papers for self -evaluation

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Contents: Introduction, Scope and Influence, Past Experiences, Objectives and Aims, Teaching under Scheme, Methods of Teaching, Role of Teacher, Measurement and Evolution, Curriculum Development, Broadbased Curriculum, Enrichment of Controls, Planning the Lesson, Teaching Devices, Audio-Visual Aids, Role of Laboratory, A Rich Laboratory, New Trends, Place among other Discipline.

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Methods Of Teaching Science

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