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Revised Multicolour Edition Based on **New CCE Pattern**
As per NCERT/CBSE Syllabus

Science for Tenth Class
Part - 2

Chemistry

Containing answers to NCERT book questions and value-based questions

LAKHMIR SINGH
MANJIT KAUR

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This book has been revised according to the CCE pattern of school education based on NCERT syllabus prescribed by the Central Board of Secondary Education (CBSE) for Class X

SCIENCE FOR TENTH CLASS

(Part – 2)

Chemistry

As per NCERT/CBSE Syllabus
(Based on CCE Pattern of School Education)

Containing answers to NCERT book questions and value-based questions

LAKHMIR SINGH

And

MANJIT KAUR

This Book Belongs to :

Name .....

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LAKHMIR SINGH did his M.Sc. from Delhi University in 1969. Since then he has been teaching in Dyal Singh College of Delhi University, Delhi. He started writing books in 1980. Lakhmir Singh believes that book writing is just like classroom teaching. Though a book can never replace a teacher but it should make the student feel the presence of a teacher. Keeping this in view, he writes books in such a style that students never get bored reading his books. Lakhmir Singh has written more than 15 books so far on all the science subjects: Physics, Chemistry and Biology. He believes in writing quality books. He does not believe in quantity.

MANJIT KAUR did her B.Sc., B.Ed. from Delhi University in 1970. Since then she has been teaching in a reputed school of Directorate of Education, Delhi. Manjit Kaur is such a popular science teacher that all the students want to join those classes which she teaches in the school. She has a vast experience of teaching science to school children, and she knows the problems faced by the children in the study of science. Manjit Kaur has put all her teaching experience into the writing of science books. She has co-authored more than 15 books alongwith her husband, Lakhmir Singh.

It is the team-work of Lakhmir Singh and Manjit Kaur which has given some of the most popular books in the history of science education in India. Lakhmir Singh and Manjit Kaur both write exclusively for the most reputed, respected and largest publishing house of India : S.Chand and Company Pvt. Ltd.

AN OPEN LETTER

Dear Friend,

We would like to talk to you for a few minutes, just to give you an idea of some of the special features of this book. Before we go further, let us tell you that this book has been revised according to the NCERT syllabus prescribed by the Central Board of Secondary Education (CBSE) based on new "Continuous and Comprehensive Evaluation" (CCE) pattern of school education. Just like our earlier books, we have written this book in such a simple style that even the weak students will be able to understand chemistry very easily. Believe us, while writing this book, we have considered ourselves to be the students of Class X and tried to make things as simple as possible.

The most important feature of this revised edition of the book is that we have included a large variety of different types of questions as required by CCE for assessing the learning abilities of the students. This book contains :

(*i*) Very short answer type questions (including true-false type questions and fill in the blanks type questions),

(*ii*) Short answer type questions,

(*iii*) Long answer type questions (or Essay type questions),

(*iv*) Multiple choice questions (MCQs) based on theory,

(*v*) Questions based on high order thinking skills (HOTS),

(*vi*) Multiple choice questions (MCQs) based on practical skills in science,

(*vii*) NCERT book questions and exercises (with answers), and

(*viii*) Value based questions (with answers).

Please note that answers have also been given for the various types of questions, wherever required. All these features will make this book even more useful to the students as well as the teachers. "A picture can say a thousand words". Keeping this in mind, a large number of coloured pictures and sketches of various scientific processes, procedures, appliances, manufacturing plants and everyday situations involving principles of chemistry have been given in this revised edition of the book. This will help the students to understand the various concepts of chemistry clearly. It will also tell them how chemistry is applied in the real situations in homes, transport and industry.

Other Books by Lakhmir Singh and Manjit Kaur

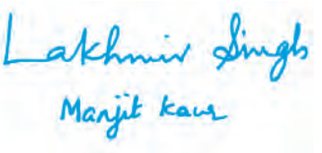
1. Awareness Science for Sixth Class
2. Awareness Science for Seventh Class
3. Awareness Science for Eighth Class
4. Science for Ninth Class (Part 1) PHYSICS
5. Science for Ninth Class (Part 2) CHEMISTRY
6. Science for Tenth Class (Part 1) PHYSICS
7. Science for Tenth Class (Part 3) BIOLOGY
8. Rapid Revision in Science
   (A Question-Answer Book for Class X)
9. Science for Ninth Class (J & K Edition)
10. Science for Tenth Class (J & K Edition)
11. Science for Ninth Class (Hindi Edition) :
    PHYSICS and CHEMISTRY
12. Science for Tenth Class (Hindi Edition) :
    PHYSICS, CHEMISTRY and BIOLOGY
13. Saral Vigyan (A Question-Answer Science
    Book in Hindi for Class X)

We are sure you will agree with us that the facts and formulae of chemistry are just the same in all the books, the difference lies in the method of presenting these facts to the students. In this book, the various topics of chemistry have been explained in such a simple way that while reading this book, a student will feel as if a teacher is sitting by his side and explaining the various things to him. We are sure that after reading this book, the students will develop a special interest in chemistry and they would like to study chemistry in higher classes as well.

We think that the real judges of a book are the teachers concerned and the students for whom it is meant. So, we request our teacher friends as well as the students to point out our mistakes, if any, and send their comments and suggestions for the further improvement of this book.

Wishing you a great success,

Yours sincerely,



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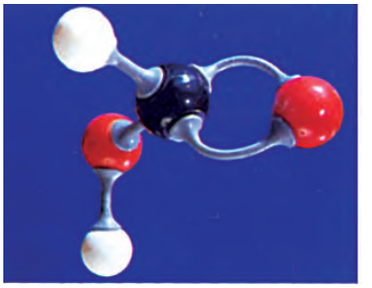

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LATEST CBSE SYLLABUS, CLASS 10 SCIENCE
(CHEMISTRY PART)

FIRST TERM
(April to September)

Theme : Materials

UNIT : CHEMICAL SUBSTANCES — NATURE AND BEHAVIOUR

Chemical reactions : Chemical equations, Balanced chemical equations, Implications of a balanced chemical equation, Types of chemical reactions : combination, decomposition, displacement, double displacement, precipitation, neutralisation, oxidation and reduction.

Acids, bases and salts : Their definitions in terms of furnishing of H^+ and OH^- ions, General properties, examples and uses, Concept of pH scale (Definition relating to logarithm not required), Importance of pH in everyday life, Preparation and uses of sodium hydroxide, washing soda, baking soda, bleaching powder and plaster of Paris.

Metals and non-metals : Properties of metals and non-metals, Reactivity series, Formation and properties of ionic compounds and covalent compounds, Basic metallurgical processes, Corrosion and its prevention.

SECOND TERM
(October to March)

Carbon compounds : Covalent bonding in carbon compounds, Versatile nature of carbon, Homologous series, Nomenclature of carbon compounds containing functional groups (halogens, alcohols, aldehydes, ketones, carboxyl, alkanes, alkenes and alkynes), Difference between saturated hydrocarbons and unsaturated hydrocarbons, Chemical properties of carbon compounds (combustion, oxidation, substitution and addition reactions), Ethanol and ethanoic acid (only properties and uses), Soaps and detergents.

Periodic classification of elements : Need for classification, Modern periodic table, Gradation in properties : valency, atomic number, metallic and non-metallic properties.

1

CHEMICAL REACTIONS AND EQUATIONS

Chemical reactions are the processes in which new substances with new properties are formed. Chemical reactions involve chemical changes. During chemical reactions, a rearrangement of atoms takes place between the reacting substances to form new substances having entirely different properties. Chemical reactions involve breaking of old chemical bonds which exist between the atoms of reacting substances, and then making of new chemical bonds between the rearranged atoms of new substances. **During a chemical reaction, atoms of one element do not change into those of another element. Only a rearrangement of atoms takes place in a chemical reaction.** We will now discuss reactants and products of a chemical reaction.

(*i*) The substances which take part in a chemical reaction are called reactants.

(*ii*) The new substances produced as a result of chemical reaction are called products.

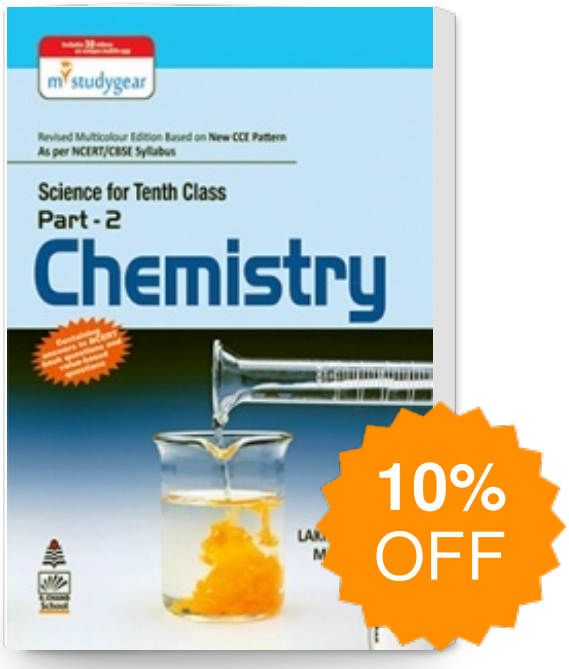
In a chemical reaction, reactants are transformed into products. The products thus formed have properties which are entirely different from those of the reactants. We will now give an example of a chemical reaction. Before we do that please note that magnesium is a silvery-white metal. Magnesium metal is available in a science laboratory in the form of a magnesium ribbon (or magnesium wire). Let us study the chemical reaction of 'magnesium' with the 'oxygen' of air now.

When a magnesium ribbon is heated, it burns in air with a dazzling white flame to form a white powder called magnesium oxide. Actually, on heating, magnesium combines with oxygen present in air to form magnesium oxide :

$$\underset{\text{(As ribbon)}}{\text{Magnesium}} + \underset{\text{(From air)}}{\text{Oxygen}} \xrightarrow{\text{Heat}} \underset{\text{(White powder)}}{\text{Magnesium oxide}}$$

The burning of magnesium in air to form magnesium oxide is an example of a chemical reaction. In this chemical reaction there are two reactants 'magnesium and oxygen' but only one product 'magnesium oxide'. The properties of the product magnesium oxide are entirely different from those of the reactants magnesium and oxygen.

Science for Tenth Class Part 2 Chemistry



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