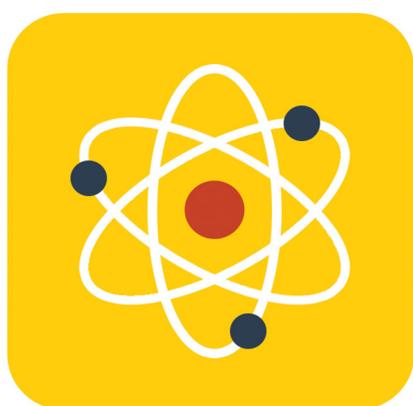


# OSWAAL CBSE CCE Laboratory Manual SCIENCE



## Class 9 Term 1

### Highlights

1. Strictly as per the latest CBSE guidelines.
2. Includes all Activities / Experiments specified in latest CBSE Curriculum.
3. Includes questions from all sets of Term 1 March 2010 to March 2014 Board Examinations with detailed answers.
4. Practical Based Questions include - MCQs and Short Answer Types.
5. Extra Practice Questions given after each activity as 'Viva Voce'.
6. Group Activities & Projects to facilitate collective efforts and extension of learning to real life situations.
7. Brief description of each activity / Experiment given as 'Theoretical Concepts'.

 **OSWAAL**  
**LABORATORY**  
**MANUAL**  
**in**  
**SCIENCE**  
**For Term 1**

**Class**  
**9**

Name .....

School .....

Class..... Section .....

Roll No. ....

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# Certificate

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## LIST OF EXPERIMENTS

Practicals should be conducted alongside the concepts taught in theory classes.

## FIRST TERM

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	<p>1. To test (a) the presence of starch in the given food sample, (b) the presence of the adulterant metanil yellow in dal.</p> <p>2. To prepare:</p> <p>a) a true solution of common salt, sugar and alum</p> <p>b) a suspension of soil, chalk powder and fine sand in water</p> <p>c) a colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of :</p> <ul style="list-style-type: none"><li>• transparency</li><li>• filtration criterion</li><li>• stability</li></ul> <p>3. To prepare</p> <p>a) a mixture</p> <p>b) a compound</p> <p>using iron filings and sulphur powder and distinguish between these on the basis of:</p> <p>(i) appearance, i.e., homogeneity and heterogeneity</p> <p>(ii) behaviour towards a magnet</p> <p>(iii) behaviour towards carbon disulphide as a solvent</p> <p>(iv) effect of heat</p> <p>4. To carry out the following reactions and classify them as physical or chemical changes :</p> <p>a) Iron with copper sulphate solution in water</p> <p>b) Burning of magnesium in air</p> <p>c) Zinc with dilute sulphuric acid</p> <p>d) Heating of copper sulphate</p> <p>e) Sodium sulphate with barium chloride in the form of their solutions in water</p> <p>5. To prepare stained temporary mounts of (a) onion peel and (b) human cheek cells and to record observations and draw their labeled diagrams.</p> <p>6. To identify parenchyma and sclerenchyma tissues in plants, striped muscle fibers and nerve cells in animals, from prepared slides and to draw their labeled diagrams.</p> <p>7. To separate the components of a mixture of sand, common salt and ammonium chloride (or camphor) by sublimation.</p> <p>8. To determine the melting point of ice and the boiling point of water.</p> <p>9. To establish relationship between weight of a rectangular wooden block lying on a horizontal table and the minimum force required to just move it using a spring balance.</p> <p>10. To determine the mass percentage of water imbibed by raisins.</p>			

## PREFACE

CBSE always believe in Global Trends of Educational Transformation. The CBSE curriculum gets its lead from National Curriculum Framework – 2005 and Right to Free and Compulsory Education Act – 2009. As said by John Holt “We learn to do something by doing it. There is no other way” is very true and this is the reason why CBSE has Science Practical's as a part of curriculum of class IX and X. So that students can perform what they learn in theory subject.

The Science Lab Manual for Classes IX & X has been written so as to supplement the need of the students to prepare for lab work and learn science practical during the entire year.

This Lab Manual includes all activities and experiments as specified in latest CBSE curriculum. It also includes questions from all sets of Term 1 March 2010 to March 2014 Board Examinations with detailed answers. Practical based questions have also been included in the form of Multiple Choice Questions (MCQs) and Short Answer Type Questions. At the end of every activity Viva Voce questions have been given for extra practice. Group Activities provide will help students to learn team work. Projects have been added to facilitate collective efforts and extension of learning to real life. Each activity/experiment comprises of theoretical concepts which provides brief description about activities.

This book is strictly according to the latest CBSE guidelines, and contains more than sufficient viva voce questions and brief description of each activity/experiment, which help students in practicing and completing the lab work. All activities and experiments are always checked twice and tried to make precise. Practically, this book provides students everything they need to learn during their lab work. Since we believe in continuous improvement, hence this book has been written with accuracy as well as updated as per CBSE guidelines and reviewed at different tiers by panel of experts.

We are sure that this book will serve as a perfect teaching guide for the teachers and good lab manual for the students. It is expected that they will take full advantage of our knowledge and experience.

At last we would like to thank our authors, editors, reviewers and specially students who regularly send us suggestions which helps in continuous improvement of this book and makes this book stand in the category of “One of the Best”. Wish you all Happy Learning.

-Publisher



# CHAPTER 1

## IS MATTER AROUND US PURE ?

### EXPERIMENT NO. 1

#### Aim

To Prepare :

- (a) a true solution of common salt, sugar and alum.
- (b) a suspension of soil, chalk powder and fine sand in water.
- (c) a colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of
  - (i) transparency      (ii) filtration criterion      (iii) stability.

#### Materials Required

Beaker (250 ml), glass rod, measuring cylinder, common salt, water, starch powder and black board chalk.

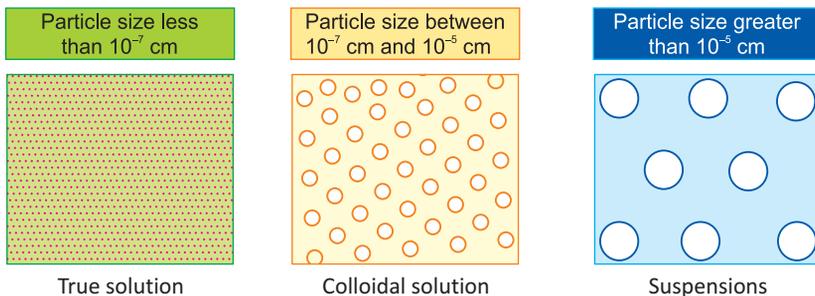
#### THEORY

A true solution is a homogeneous mixture of two or more substances. The solute and solvent particles cannot be observed by the naked eye as they are very small. A suspension is a heterogeneous mixture of two or more substances. The solute particles of suspension are often visible by the naked eyes. A colloidal is a microscopically small substance. That is equally dispersed throughout another material.

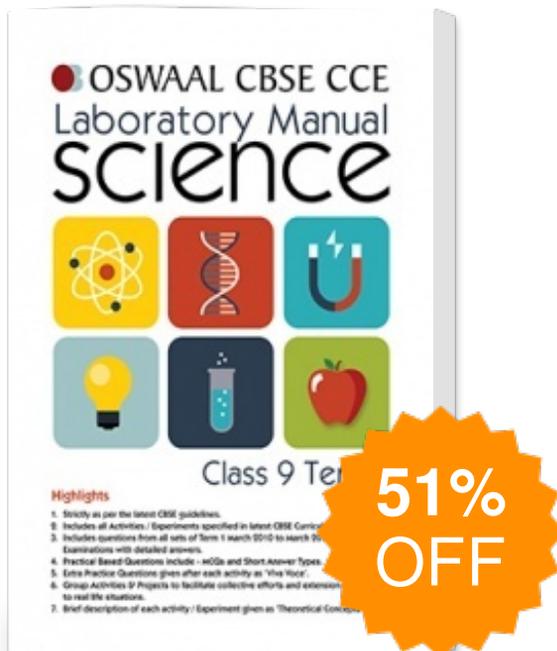
→ To differentiate between the true solution, suspension and colloidal on the basis of transparency :

Take three test- tubes and label them A, B and C. A filled with true solution of common salt, B filled with suspension of chalk powder, and C filled with colloidal solution of egg albumin. After this we will observe all three test- tubes carefully.

- (i) In test- tube A (true solution), the light passes through the solution.
- (ii) In test- tube B (suspension), light does not passes though the solution.
- (iii) In test- tube C (colloidal), the beam of light gets scattered.



# Oswaal CBSE CCE Laboratory Manual For Class 9 (Term 1) science



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