ALLEN IntelliBrain®

Experiential Experimental Edutaining

CHEMISTRY

SAMPLE BOOK

6 GRADE

CHEMISTRY

I'm the

Intelli Kid

and

I'm becoming the

Best Version

of myself with

ALLEN Intelli Brain®

Experiential Experimental Edutaining

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I AM PROGRESSING

(Tick mark the columns after achieving the Learning Milestones)

TOPIC	1st Learning	Exercise Solving	1st Revision	2nd Revision
 Fibre to Fabric				
 Sorting Materials into Groups				
 Separation of Substances				
 Changes Around Us				
 Water				
 Air Around Us				

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CHEMISTRY

SAMPLE THEORY

CHAPTER 3 SEPARATION OF SUBSTANCES

INTRODUCTION

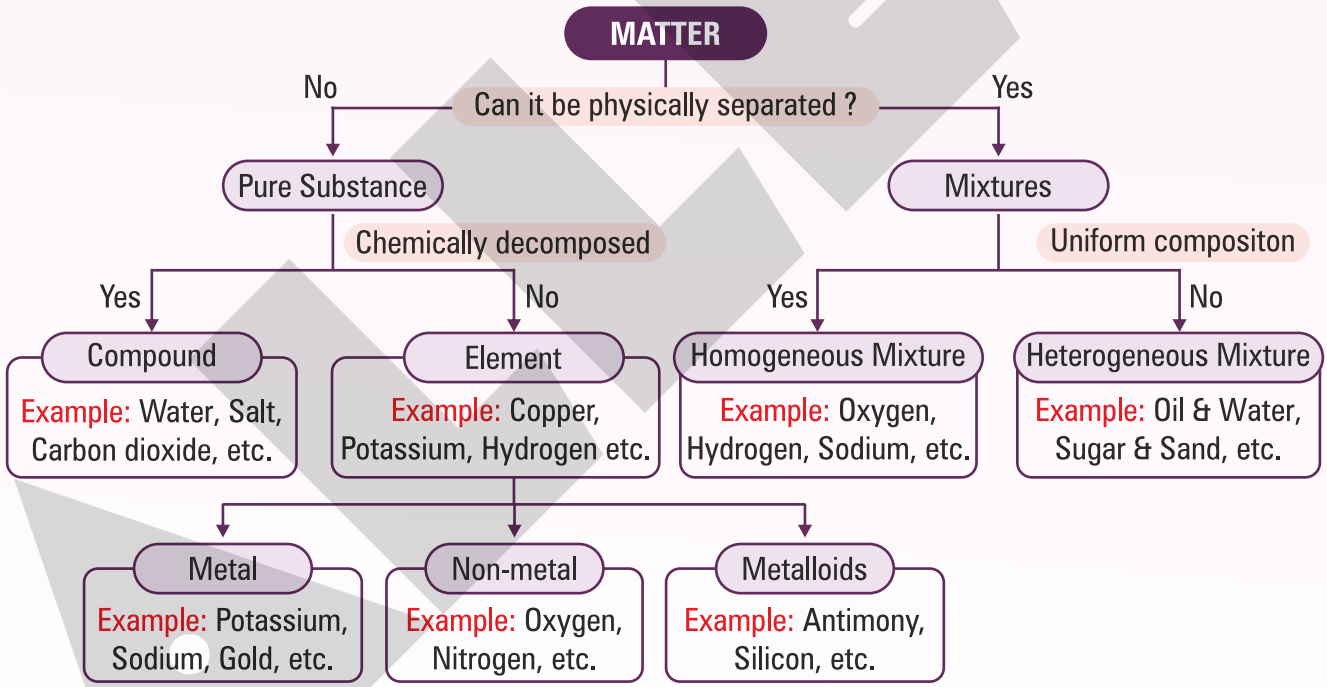
We see many things around us which are a mixture of one or more substances.

For example, while making tea we mix many things in it like, tea leaves, sugar, milk, water and ginger but afterwards we strain it, so as to separate it from the mixture and obtain just the liquid out of it.

CLASSIFICATION OF MATTER

Anything which occupies space and has mass is called **matter**. Matter exists in three different states, namely, solid, liquid and gas.

Matter can be classified as shown below.



NEED FOR SEPARATION OF SUBSTANCES

We need to separate the substances from their mixtures because of the following reasons:

- To obtain useful substance from a mixture of substances.
- To remove any type of impurities or harmful substances from a solution.
- To remove unwanted materials from a mixture.

SEPARATION TECHNIQUES

The techniques used to separate different substances and obtain useful substances are called **separation techniques**. These techniques are used on the basis of the type of substances present in a mixture and their properties.

Solid - Solid Mixtures

Solid- solid mixtures can be separated by the following techniques:

A. Handpicking

The process of removing unwanted particles from a useful substance using our hands is called **handpicking**. It is mainly done when the size, colour and texture of the particles is different enough so that they can be separated by hands easily.

Example: Handpicking stones (unwanted particles) from grains.

B. Winnowing

The process of removing lighter and unwanted particles (husk) from the heavier particles of grains with the help of wind is called **winnowing**. Grains consisting husk are held at some height from the ground in the presence of wind.

When these grains are allowed to move down slowly, the husk moves ahead and get separated as it is lighter in weight and the grains are collected on the ground. This is how they are separated.

C. Threshing

The process of threshing is used to separate the seeds from the harvested stalks of grains. In this process, the stalks are beaten on the ground in order to separate the seeds. This can be done manually or by machines also.

D. Sieving

The process of sieving is used when there is enough size difference between the particles. A mesh (sieve) is used and the mixture is kept on it.

The particles which are smaller in size pass through the sieve and are collected down whereas the particles which are bigger in size remain on the sieve as it is. This is how sieving is helpful in separating different particles.

Example: Separation of coarse and fine particles of flour.

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CHEMISTRY

SAMPLE EXERCISE

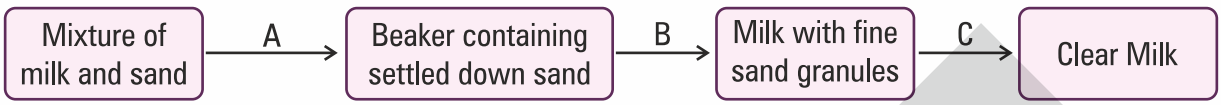
EXERCISE

GRADE-6

Separation of Substances

Directions: Solve each of the following multiple choice questions by choosing the most appropriate option.

Directions for Q. 1 to Q. 4: Refer to the flowchart given below and answer the questions that follow.



1. For the above given flowchart select the correct option for A, B and C.

	A	B	C
(1)	Sedimentation	Decantation	Filtration
(2)	Sedimentation	Filtration	Decantation
(3)	Filtration	Centrifugation	Decantation
(4)	Decantation	Centrifugation	Filtration

2. Raju wants to separate a mixture of Sulphur and Iron filings. Which of the following methods should he use to separate this mixture ?

(1) A (2) B (3) C (4) None of these

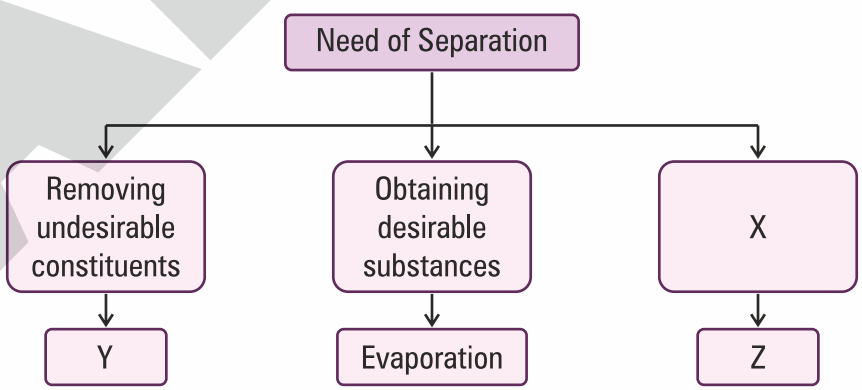
3. A mixture of sand and water was made, but pure water couldn't be obtained even after performing the separation methods A and B. Which method should be followed to obtain pure water ?

(1) Filtration (2) Threshing (3) Handpicking (4) Chromatography

4. Which of the following mixtures cannot be separated by using the separation method C ?

(1) Draining the water from a pot of noodles
(2) Separation of fine gravel and coarse gravel
(3) Separating rotten grapes
(4) None of these

Directions for Q. 5 to Q. 7: Refer to the flowchart given below and answer the questions that follow.



5. For the above given flowchart select the correct option for X, Y and Z.

	X	Y	Z
(1)	Obtaining pure substances	Handpicking	Filtration
(2)	Obtaining impure substances	Churning	Threshing
(3)	Obtaining hard substances	Filtration	Churning
(4)	Obtaining soft substances	Magnetic separation	Winnowing

6. Which of the following mixtures can be separated by using the separation technique Y ?

(1) Rotten grapes from bunch of good grapes
(2) Mixture of sand and salt
(3) Grains from their covers
(4) All of the above

7. Which of the following separation technique is an example of removing undesirable constituents from a particular substance ?

(1) Sieving (2) Threshing
(3) Winnowing (4) All of the above

8. Read the following statements and mark them as true (T) or false (F) by choosing the appropriate option.

A. Scrap iron is picked by huge magnets in scrapyards.
B. Winnowing is done by using sieve.
C. Hand-picking is very time-consuming.
D. Washing machine follows the technique of churning.

(1) TFTT (2) TTTT (3) FFFF (4) FFTT

9. Rashi kept a mixture of sand and water on windshill for an hour in a beaker. She observed that something has settled down in the beaker of the mixture. Which of the following thing would have settled down ?

(1) Sand (2) Water (3) Salt (4) Pepper

10. Match the Column-I with Column-II and select the correct option.

Column-I	Column-II
1. Pepper and salt	A. Magnetic separation
2. Sand and iron nails	B. Churning
3. Cream and milk	C. Separating funnel
4. Oil and water	D. Flotation

(1) 1-A, 2-B, 3-C, 4-D (2) 1-D, 2-A, 3-B, 4-C
(3) 1-B, 2-C, 3-D, 4-A (4) 1-C, 2-D, 3-B, 4-A