Chapter 5: Substances in the Surroundings – Their States & Properties

EXERCISE [PAGE 41]

Exercise | Q 1 | Page 41
In the paragraph below, write 'solid', 'liquid' or 'gas' in each of the brackets depending on the substance referred to just before.
On a bright sunny day, Riya and Gargi are playing with a ball ( ) in the park. Gargi feels thirsty. So, Riya brings tender coconut water ( ) for her. At the same time, a strong breeze ( ) starts blowing and it also begins to rain ( ). They run back into the house ( ), change their clothes ( ), and then their mother gives them a cup ( ) of hot milk ( ) to drink.

SOLUTION

On a bright sunny day, Riya and Gargi are playing with a ball (**solid**) in the park. Gargi feels thirsty. So, Riya brings tender coconut water (**liquid**) for her. At the same time, a strong breeze (**gas**) starts blowing and it also begins to rain (**liquid**). They run back into the house (**solid**), change their clothes (**solid**) and then their mother gives them a cup (**solid**) of hot milk (**liquid**) to drink.

Exercise | Q 2.1 | Page 41
Discuss.
Riya pours some water from her bottle into another bottle. Does it change the shape of the water?

SOLUTION

Yes, the shape of the water will change because liquids do not have a shape of their own. They take the shape of the container in which they are present.

Exercise | Q 2.2 | Page 41
Discuss.
Halima picks up a small stone from the ground and puts it in the water in a dish. Does the shape of the stone change?

SOLUTION

No, the shape of the stone will not change by putting it in a dish containing water because solids have definite shapes. They do not change their shape and retain it, no matter whatever be the circumstances.

Exercise | Q 3.01 | Page 41
Write the properties of this substance.
Water

SOLUTION

Water- Fluidity

Exercise | Q 3.02 | Page 41
Write the properties of this substance.
glass

SOLUTION

Glass- Transparent, brittle

Exercise | Q 3.03 | Page 41
Write the properties of this substance.
chalk

SOLUTION

Chalk- Brittle

Exercise | Q 3.04 | Page 41
Write the properties of this substance.
iron ball

SOLUTION

Iron ball- Hardness

Exercise | Q 3.05 | Page 41
Write the properties of this substance.
sugar

SOLUTION

Sugar- Solubility

Exercise | Q 3.06 | Page 41
Write the properties of this substance.
salt

SOLUTION

Salt- Solubility

Exercise | Q 3.07 | Page 41
Write the properties of this substance.
flour

SOLUTION

Flour-Solubility

Exercise | Q 3.08 | Page 41
Write the properties of this substance.
coal

SOLUTION

Coal- Brittle

Exercise | Q 3.09 | Page 41
Write the properties of this substance.
soil

SOLUTION

Soil- Solubility

Exercise | Q 3.10 | Page 41
Write the properties of this substance.
pen
SOLUTION

Pen- Hard

Exercise | Q 3.11 | Page 41
Write the properties of this substance.
ink

SOLUTION

Ink- Fluidity

Exercise | Q 3.12 | Page 41
Write the properties of this substance.
soap

SOLUTION

Soap- Brittle

Exercise | Q 4 | Page 41
What is sublimation? Write the names of everyday substances that sublimate.

SOLUTION

Sublimation is the change of the gaseous state directly into the solid-state, without going through the liquid state, and vice versa.

Examples of sublimation:- dry ice, moth balls or napthalene balls, camphor (Kapur).

Exercise | Q 5.1 | Page 41
What is it made from? Why?
A sickle to cut sugarcane.

SOLUTION

A sickle to cut sugarcane- Made out of iron since it is very hard and strong.

Exercise | Q 5.2 | Page 41
What is it made from? Why?
The sheets used for roofing.

SOLUTION

The sheets used for roofing- Aluminium is used to make sheets for roofing because it is malleable i.e. it can be hammered into sheets.

Exercise | Q 5.3 | Page 41
What is it made from? Why?
A screwdriver

SOLUTION

A screwdriver- It is made up of steel because it is very hard and duable.

Exercise | Q 5.4 | Page 41
What is it made from? Why?
A pair of tongs.

SOLUTION

A pair of tongs- They are made up of metals like iron or aluminum because they have high melting points and do not melt while using on flames.

Exercise | Q 5.5 | Page 41
What is it made from? Why?
Electric cables.

SOLUTION

Electric cables- Metals like silver, gold, copper, and platinum are used to make wires because they are ductile i.e. they can be drawn into wires.

Exercise | Q 5.6 | Page 41
What is it made from? Why?
Ornaments
SOLUTION

Ornaments - Metals such as gold and silver are used for making jewellery because they are very lustrous.

Exercise | Q 5.7 | Page 41
What is it made from? Why?
Pots and pans.

SOLUTION

Pots and pans- Copper is used to making pots and pans because it is a good conductor of heat.

Exercise | Q 6.1 | Page 41
What will happen if....? And why?
Nails are made of plastic.

SOLUTION

If nails are made out of plastic, they cannot be used for their usual purposes. They could not be hammered like iron nails and could not possess the strength which iron nails have. It means they would have no strength to hold the things together.

Exercise | Q 6.2 | Page 41
What will happen if....? And why?
A bell is made of wood.

SOLUTION

If a bell is made of wood, it will not ring. The bells are made up of metals like copper etc. as they show the property of sonority i.e. the ability to produce a ringing sound when struck upon. Wood does not have this property and hence cannot be used to make bells.

Exercise | Q 6.3 | Page 41
What will happen if....? And why?
Rubber is not fitted on a pair of tongs.

SOLUTION

Tongs are made up of metals and they have the ability to conduct heat. If the rubber is attached to the tongs, the heat will be transferred to the rubber and it will melt off.

Exercise | Q 6.4 | Page 41
What will happen if....? And why?
A knife is made of wood.

SOLUTION

The knife is used to cut vegetables, fruits, etc. The regular knives which we use are made up of metals like iron etc. as they are hard, strong, and durable. Also, they can be sharpened and moulded into shapes that we desire. Knifes made out of wood cannot be used for cutting or chopping purposes.

Exercise | Q 6.5 | Page 41
What will happen if....? And why?
An axe is made of rubber.

SOLUTION

An axe is used to cut and chop wood. It is made up of metals because they are strong, hard and durable. Also, they can be moulded and sharpened which is an important characteristic. These properties are not applicable to rubber. An axe made of rubber will neither be hard nor sharp enough so that it can be used for its usual purposes.

Exercise | Q 7.1 | Page 41
Who am I?
I'm found in a thermometer, I measure your temperature.

SOLUTION

I'm found in a thermometer, I measure your temperature- Mercury

Exercise | Q 7.2 | Page 41
Who am I?
I make things hot or cold.

SOLUTION

I make things hot or cold- Temperature

Exercise | Q 7.3 | Page 41
Who am I?
I have no shape whatsoever!

SOLUTION

I have no shape whatsoever !- Gas

Exercise | Q 7.4 | Page 41
Who am I?
I dissolve in water, but not in kerosene.

SOLUTION

I dissolve in water, but not in kerosene- Salt

Exercise | Q 8.1 | Page 41
Why does this happen?
Coconut oil thickens in winter.

SOLUTION

Coconut oil is made up of two types of fat-saturated and unsaturated fats. It contains 90% saturated fats and 10% unsaturated fats. It remains liquid at higher temperatures but turns into solid as the temperatures drop in winters. This property of coconut oil is attributed to the higher content of saturated fats. Oils like mustard oil, sunflower oil

remain liquid even in winters because they contain less amount of saturated fats as compared to coconut oil.

Exercise | Q 8.2 | Page 41
Why does this happen?
Kerosene left open in a dish disappears.

SOLUTION

Kerosene left open in a dish disappears because it is a volatile compound. It quickly evopurates if it is kept in open.

Exercise | Q 8.3 | Page 41
Why does this happen?
The fragrance of incense sticks lighted in one corner of a room spreads to the other corner.

SOLUTION

When the incense stick is lighted, it releases smoke which contains the fragrance. Smoke is a form of gas that quickly spreads in the entire room along with the fragrance and thus making the entire room fragrant.

Exercise | Q 8.4 | Page 41
Why does this happen?
What you see in the picture.

SOLUTION

The picture shows two things that are present in the tub of water. One is a balloon that floats on the surface of the water while the other is an apple that sinks to the bottom of the tub. The balloon floats on the surface of the water because it has less density as compared to the density of the water whereas the apple sinks to the bottom of the tub because it has more density than water.