

Wk	M	T	W	T	F	S	S
31/36	31					1	2
32	3	4	5	6	7	8	9
33	10	11	12	13	14	15	16
34	17	18	19	20	21	22	23
35	24	25	26	27	28	29	30

APPOINTMENT / MEETING

Class VI

Date - 4.6.20

Chapter-3 Matter (Part-4)

Subject Chemistry

- 8
- 9 (1) Give reasons for the following -
- 10 (a) Liquids and gases flow but solids cannot.

11

12 Ans: Liquids and gases flow but solids cannot because the molecules of liquids and gases are very loosely packed with each other but the molecules of solids are very closely packed with each other.

- 13 (b) A gas fills up the space available to it.

14

15 Ans: A gas fills up the space available to it because they have neither a fixed shape nor a fixed volume. They have no free surfaces either.

- 16 (c) The odour of scent spreads in a room.

NOTES

Ans: The odour of scent spreads in a room because due to the movement of the particles are in motion, known as diffusion.

14

2020 JULY

DAY 196 - 170 WEEK 29

TUESDAY

07

July 2020

Wk	M	T	W	T	F	S	S
27			1	2	3	4	5
28	6	7	8	9	10	11	12
29	13	14	15	16	17	18	19
30	20	21	22	23	24	25	26
31	27	28	29	30	31		

APPOINTMENT / MEETING

(Q) We can talk through air.

Ans: We can talk through air because sound need medium to spread, sound is a kind of wave which can propagate through air.

(Q) Liquids have a definite volume but no definite shape.

Ans: Liquids have a definite volume but no definite shape because they have only one free surface.

(Q) When a teaspoon of sugar is added to half a glass of water and stirred, the water level in the glass remain unchanged.

Ans: When a teaspoon of sugar is added to half a glass of water and stirred, the water level in the glass remain unchanged because sugar particles are very small and they can adjust themselves in the intermolecular space of water and sugar is soluble in water so water level remain unchanged.

NOTES

Wk	M	T	W	T	F	S	S
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APPOINTMENT / MEETING

Q A red ink drop added to a small amount of water in a glass turns the water red in some time.

Ans: A red ink drop added to a small amount of water in a glass turns the water red in some time because water as well as ink particles are in continuous random motion. Due to motion, the red coloured particles of the ink spreads all over and give red colour to the water.

Home task :-

1) What is expansion of matter?

2) What is chemical change?

3) Give an eg. of chemical change and explain it.

AS ✓
4.8.20

NOTES

Melting and boiling points depend upon the nature of the substance.

- Conversion of a liquid into vapour by heating is called vaporisation.

Liquid + Heat \rightarrow Vapour

- On cooling, vapour can be converted into liquid.

Vapour - Heat \rightarrow Liquid

Thus, we can see that the change of state is a reversible change affected by temperature and pressure.

2. EXPANSION OF MATTER

All the three states of matter *i.e.*, solid, liquid and gas expand on heating. This can be shown by the following activities.

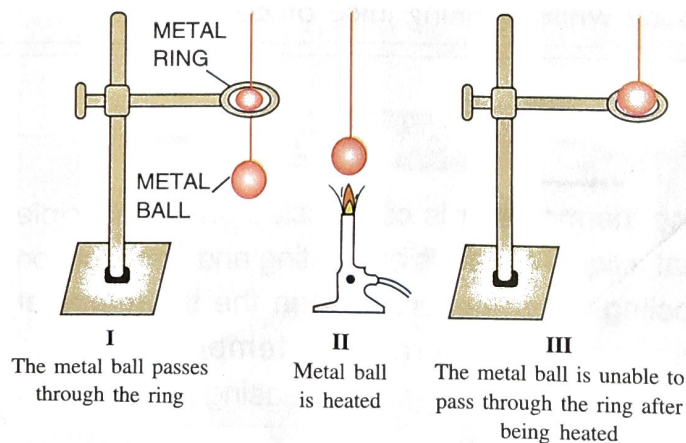


Activity 14

Ball and ring experiment to show that a solid expands on heating and contracts on cooling.

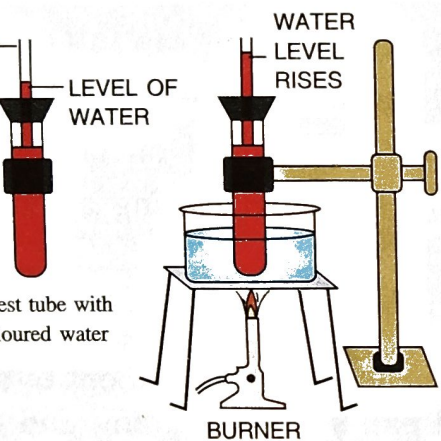
Take a metallic ring and ball. Try to pass the metal ball through the ring. The ball is able to pass through the ring. Now heat the metal ball for 5-6 minutes. The hot ball is not able to pass through the ring.

This shows that a solid expands on heating. Now cool the ball, it again passes through the ring. This shows that a solid contracts on cooling.



Activity 15
How that a liquid expands on heating and contracts on cooling.

Take a test tube filled with coloured water. Stop the mouth of the test tube with a cork. Fit a capillary tube through a hole in the cork such that the capillary tube is dipped in water. Some water enters the capillary tube. Note the level of water in the capillary tube. Now heat the test tube by putting it over a burner. You will observe that the level of water increases in the capillary tube.



This diagram shows that a liquid expands on heating. On cooling the test tube, the water level in the capillary tube decreases, showing that a liquid contracts on cooling.

A capillary tube is a thin glass tube with a very small internal diameter.

A similar action can also be shown using a glass drinking juice or cold drink.

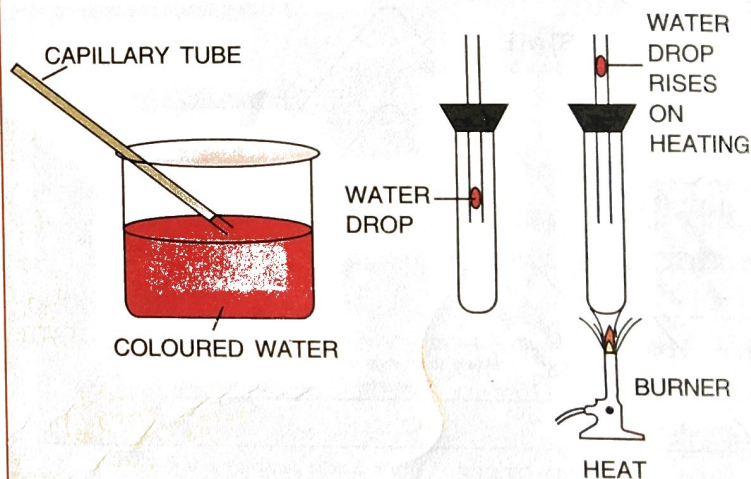
Do You Know ?

A thermometer is constructed on the principle that a liquid expands on heating and contracts on cooling. The mercury filled in the thermometer expands with increasing temperature and contracts on cooling *i.e.* decreasing temperature.

To show thermal expansion of a gas.

Take some coloured water in a beaker. Take a capillary tube and dip its one end in the coloured water to take a drop of it in the capillary tube. Fit this capillary through a hole in the cork. Now fit the cork in a test tube carefully.

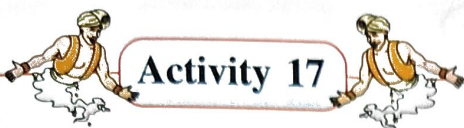
Now heat the test tube. After some time you will observe that, drop of water moves up. This is because air in the test tube expands on heating which pushes the water drop up. Now cool the test tube, the water drop again comes down. This shows that air expands on heating and contracts on cooling.



3. CHEMICAL CHANGE ON HEATING

A chemical change is a permanent change in which new substances are formed from the substances taken. The properties of the new substance are entirely different from those of the original substances.

Heating causes chemical change in a substance. This can be shown by the following activity.



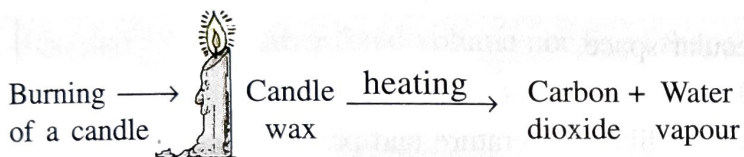
Activity 17

Take a piece of paper and burn it. It turns into ash. This is a new substance whose properties are different from that of the paper. Ash cannot be changed into paper again.

This proves that burning of a substance causes chemical change.

Another example is **burning of a candle**.

On heating, candle wax melts, then turns into vapour which reacts with air to produce two new substances, carbon dioxide and water.



Therefore a candle on burning becomes smaller and smaller and the part of wax which has undergone chemical change cannot be recovered.

POINTS TO REMEMBER :

1. Gradual mixing of two or more substances by molecular motion is called **diffusion**.
2. The freezing point of matter in the liquid state and the melting point of that matter

in its solid state have the same numerical value. The freezing point of water is 0°C , and the melting point of ice is 0°C .

3. The boiling point of matter in the liquid state and the condensation point of that matter as a gas have the same numerical value. The boiling point of water is 100°C and the condensation point of steam is also 100°C .

4. The substances which remain in the gaseous state under normal conditions of temperature and pressure are called **gases**.

Example : Oxygen, hydrogen, nitrogen, carbon dioxide, etc. are in gaseous state at room temperature.

The substances in gaseous state are called **vapour**.

Example : Water changes into gaseous state on heating. Hence, its gaseous state is called water vapour.

5. A substance in pure state has a fixed boiling or melting point. Hence, they are used to test the purity of a substance. Their values change if the substance is not pure.