Changes Around Us...

Question 1.

What are reversible and irreversible changes?

Answer:

Reversible and irreversible changes:

Reversible changes: The changes which can be brought back to its original form are known as reversible changes. For example, melting of wax and stretching of a rubber band.

Irreversible changes: The changes in which the matter cannot be brought back to its original state are known as irreversible changes. For example, burning of paper changes it into ash and smoke. Paper cannot be obtained back from ash and smoke.

Question 2.

What are the differences between reversible changes and irreversible changes?

Answer:

The differences between reversible changes and irreversible changes:

Physical change (Reversible changes)	**Chemical change (Irreversible changes)**

1. A change which can be undone or reversed.	1. A change which cannot be undone or reversed.
2. It is a temporary change.	2. It is a permanent change.
3. Melting and folding are examples of it.	3. Burning and cooking of food are examples of it.

Question 3.

Can you obtain wood from sawdust?

Answer:

No, because it is an irreversible change.

Question 4.

Can we say that ironing of a cloth is a reversible change? Give reasons.

Answer:

Ironing removes the wrinkles of the clothes, which can come back in the same condition. Hence, ironing of a cloth is a reversible change.

Question 5.

Can deforestation be considered as a reversible change?

Answer:

No, deforestation can’t be considered as a reversible change because no same tree can be planted after felling down or cutting.

Question 6.

Is printing a reversible or an irreversible change?

Answer:

Printing is an irreversible change because we cannot separate and collect the printing ink after printing.

Question 7.

Give two examples each of reversible and irreversible changes.

Answer:

Reversible changes: Melting of wax and stretching of a rubber band.

Irreversible changes: Burning of a paper and growth of plants.

Question 8.

State whether burning of a piece of paper is a reversible or an irreversible change.

Answer:

When we bum a piece of paper, it changes into ash and smoke. We cannot combine the ash and smoke to form the original piece of paper. So the burning of a piece of paper is an irreversible change.

Question 9.

Classify the following as reversible or irreversible changes:

(i) Growth of a plant

(ii) Ploughing a field,

(ii) Melting of wax

(iv) Falling of rain

(v) Pulling of rubber string

(vi) Breaking of a glass rod

(mi) Cooking of food.

Answer:

Reversible changes: (ii), (iii), (v)

Irreversible changes: (i), (iv), (vi), (vii).

Question 10.

How does curd set? Is this change reversible?

Answer:

A small quantity of curd is added to warm milk. The milk is stirred and is set aside undisturbed for a few hours at a warm place. In a few hours, the milk changes into curd.

Curd formed from milk cannot be changed into milk again. So, this is an irreversible change.

Question 11.

What are fast and slow changes?

Answer:

Fast changes take place over a short duration of time.

Slow changes take a longer duration of time to complete.

Question 12.

Define physical and chemical changes. Give examples.

Answer:

1. **Physical change:** Physical change is a temporary change in which chemical composition of the substance does not change and no new substance is formed.
2. During a physical change, only the physical properties of a substance change. It is a reversible change. For example, melting of ice, during this change, the water changes from its solid form to liquid form. It can be solidified again.The water remains water in both the cases.

3. **Chemical change:** A chemical change is a permanent change in which not . only the physical properties but chemical properties also change. It is an irreversible change. For example, formation of curd from milk, rusting of iron, etc.

Question 13.

Formation of clouds is a physical change. Explain.

Answer:

Formation of clouds is a physical change as it is phase transformation cycle of natural water from liquid to gas and then, gas to liquid. Hence, the property of water never changes in clouds form.

Question 14.

Explosion of a cracker is a chemical change. Explain.

Answer:

Explosion of crackers is a chemical change because the explosive reactants are transformed into gaseous products along with heat and light and thus cannot be reversed.

Hence, it is a chemical change.

Question 15.

Give some examples of physical and chemical changes.

Answer:

Examples of physical changes:

Tearing of sheet of paper into pieces, melting of ice, change of water into steam, breaking of glass tumbler, glowing of electric bulb, dissolution of sugar or salt in water.

Examples of chemical changes:

Burning of paper, wood, candle, etc., formation of curd from milk, cooking of food, rusting of iron and mixing of vinegar with baking soda, electrolysis of water.

Question 16.

Classify the following changes in as many ways as you can:

Breaking of a brick with a hammer.

Beating of heart.

Germination of a seed.

Burning of an incense-stick (agarbatti).

Occurrence of solar eclipse.

Answer:

Physical change, irreversible change.

Periodic change, irreversible change.

Irreversible change,

Irreversible change, chemical change.

Irreversible change.

Question 17.

Most physical changes are reversible. Give reasons with two examples.

Answer:

Melting of ice: During this change, the water changes from its solid form to liquid form. It can be solidified again. The water remains water in both cases, hence reversible.

Glowing of an electric bulb: During this change, electricity is passed through the tungston filament which becomes white hot and glows, but when the switch is off, the filament returns to its original shape and condition, hence totally reversible.

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