

Changes – Physical and Chemical

EXERCISE [PAGE 91]

Exercise | Q 1.1 | Page 91

Distinguish between the following.

Physical change and chemical change

Solution:

Physical Change	Chemical Change
The chemical composition of a substance does not change	The chemical composition of a substance does not remain the same
Easily reversible	Not easily reversible
No new substance is formed	New substances are always formed
Melting of ice is an example of physical change	Burning of paper is an example of chemical change

Exercise | Q 1.2 | Page 91

Distinguish between the following.

Periodic change and non-periodic change

Solution:

Periodic changes	Non periodic changes
1. Events that repeat themselves after a fixed period of time and whose occurrence can be predicted are called periodic changes.	The events that do not repeat themselves after regular interval of time are called non periodic changes.
2. Example- rotation of earth, revolution of earth, day and night, seasons etc.	Example- natural disasters like earthquake, cyclones etc.

Exercise | Q 1.3 | Page 91

Distinguish between the following.

Natural change and man-made change

Solution:

Natural changes	Man-made changes
1. The changes which are brought about by nature itself and are not under the control of humans are called natural changes.	The changes which are brought about by humans are called man-made changes.
2. Examples- change of season, tides in the sea, aging of plants, etc.	Examples- burning of fuels, cutting hair, switching on lights, etc.

Exercise | Q 2.1 | Page 91

Under which different types can the following changes be classified?

Conversion of milk into yogurt.

Solution: Conversion of milk into yoghurt- Chemical change

Exercise | Q 2.2 | Page 91

Under which different types can the following changes be classified?

Bursting of a cracker.

Solution: Bursting of a cracker- Chemical change

Exercise | Q 2.3 | Page 91

Under which different types can the following changes be classified?

The occurrence of an earthquake.

Solution: The occurrence of an earthquake- Natural change

Exercise | Q 2.4 | Page 91

Under which different types can the following changes be classified?

Revolution of the earth around the sun.

Solution: Revolution of the earth around the sun - Periodic change

Exercise | Q 2.5 | Page 91

Under which different types can the following changes be classified?

Stretching of a spring.

Solution: Stretching of a spring - Physical change

Exercise | Q 3.1 | Page 91

Give reasons.

While purchasing canned food, its expiry date should be checked.

Solution: While purchasing canned food their expiry date should be checked because an expiry date indicates that for how long a canned food is safe for consumption. Canned foods with expired dates are not considered worth consumption as they could affect your health. They might get contaminated with microorganisms like bacteria or may have no nutritional value left after its expiration.

Exercise | Q 3.2 | Page 91

Give reasons.

An iron article should be given a coat of paint

Solution: Iron articles often undergo rusting resulting in the formation of a reddish-brown layer on its surface. Rusting is caused by the exposure of iron to the air and water in the surroundings. An iron article that is coated with paint prevents the interaction of iron with the surrounding air and water and thus protects it from rusting.

Exercise | Q 3.3 | Page 91

Give reasons.

A wooden article should be polished.

Solution: A wooden article should be polished because it protects the wooden article from sunlight and all other external conditions and also it reduces the probability of wooden mites damaging the furniture.

Exercise | Q 3.4 | Page 91

Give reasons.

Copper and brass utensils should be tinned.

Solution: Copper and brass materials also undergo corrosion resulting in the formation of a greenish layer on this surface. When the surface of copper/ brass comes in contact with air or water, it results in corrosion, and to prevent this, the process of tining is used. In this process, copper and brass articles are coated with tin.

Exercise | Q 3.5 | Page 91

Give reasons.

A dry handkerchief gets wet at once on dipping in water, but it takes longer for a wet handkerchief to dry.

Solution: A dry handkerchief gets wet at once because it quickly absorbs the water in which it is dipped. However, it takes longer for a wet handkerchief to dry because the water needs to evaporate from the handkerchief. Evaporation is a slow process that is dependant on other factors as well like relative humidity.

Exercise | Q 4.1 | Page 91

What will you take into account while identifying the following?

A physical change in a substance.

Solution: Physical changes are those changes in which only the forms of substances get modified; the chemical natures and compositions of the substances involved are not altered.

Characteristics:

- No new substance is formed during a physical change.
- Most physical changes can be reversed easily.
- The chemical composition of a substance undergoing physical change remains the same.

Exercise | Q 4.2 | Page 91

What will you take into account while identifying the following?

A chemical change in a substance.

Solution: Chemical changes are changes that involve the reaction of substances with one another. Such reactions result in alterations in the chemical compositions of the substances involved. These changes lead to the formation of new substances.

Characteristics:

- One or more new substances are formed during a chemical change.
- Most chemical changes cannot be reversed easily.

- The chemical composition of a substance undergoing chemical change does not remain the same.
- A chemical change is always accompanied by a change in energy.

Exercise | Q 5 | Page 91

Read the paragraph and note down the various types of changes it mentions.

It was nearing six o'clock in the evening. The sun was setting. A breeze was blowing. Leaves on the tree were shaking. Sahil was sitting in the courtyard, rolling balls of wet soil, and shaping them into various toys. Then he felt hungry and went into the house. Mother made a dough from wheat flour and fried purees. While eating hot purees, his attention was drawn outside the window. It had started raining. There was lightning, too. Sahil was enjoying his dinner in the dim light.

Solution: It was nearing six o'clock in the evening (**Periodic change**). The sun was setting (**Periodic change**). A breeze was blowing (**Natural change**). Leaves on the tree were shaking (**Physical change**). Sahil was sitting in the courtyard, rolling balls of wet soil, and shaping them into various toys (**Physical change**). Then he felt hungry (**Chemical change**) and went into the house. Mother made a dough from wheat flour and fried purees (**Irreversible change**). While eating hot purees, his attention was drawn outside the window. It had started raining (**Natural change**). There was lightning (**Natural change**), too. Sahil was enjoying his dinner in the dim light.