

## Very Short Answer Questions

**Q.1. Melting of wax is a change where a solid changes to liquid state. Give one more such change which you observe in your surroundings.**

[NCERT Exemplar]

**Ans.** Melting of ice

**Q.2. What kind of change is shown by tearing of paper?**

[NCERT Exemplar]

**Ans.** A physical change that cannot be reversed.

**Q.3. Why is carbon dioxide gas used in fire extinguishers?**

**Ans.** Carbon dioxide cuts the contact of fire with oxygen which is needed for combustion and fire extinguishes from lack of oxygen.

**Q.4. What is galvanisation?**

**Ans.** The method of coating the iron material with a more reactive metal (zinc) to prevent rusting is called galvanisation.

**Q.5. What is crystallisation?**

**Ans.** The process of obtaining crystals from its hot saturated solution is called crystallisation.

**Q.6. What is the composition of stainless steel?**

**Ans.** Stainless steel is an alloy of Iron with carbon and other metals like chromium, nickel and manganese.

**Q.7. The breaking down of ozone is a chemical change or a physical change.**

**Ans.** It is a chemical change because ozone gives oxygen after breaking down and oxygen is different from ozone.

## Short Answer Questions

**Q.1. Classify the following processes into physical or chemical changes:**

- a. Beating of aluminium metal to make aluminium foil.
- b. Digestion of food.
- c. Cutting of a log of wood into pieces.
- d. Burning of crackers.

[NCERT Exemplar]

**Ans.** (a) and (c) are physical changes.

(b) and (d) are chemical changes.

**Q.2. Explain the following:**

[NCERT Exemplar]

**Q. Lime water turns milky on passing carbon dioxide gas into it.**

**Ans.** White coloured insoluble calcium carbonate is formed.

**Q. Bubbles are produced when acetic acid is added to a solution of sodium hydrogencarbonate.**

**Ans.** Carbon dioxide is evolved due to the chemical reaction between acetic acid and sodium hydrogencarbonate.

**Q.3. How can iron articles be prevented from rusting?**

**Ans.** Iron articles can be prevented from rusting by greasing, painting, galvanising, electroplating, alloying, plastic coating or chromium plating.

**Q.4. What is rust? How is it formed?**

**Ans.** The reddish-brown covering of flaky substance on iron objects is called rust. When an iron object is left in moist air for a considerable time, rust is formed.

**Q.5. Why does a magnesium ribbon burn with a dazzling white flame?**

**Ans.** This is because magnesium reacts with oxygen in air to form white coloured magnesium oxide.

**Q.6. Give example of two substances that can undergo physical and chemical changes, depending upon the conditions.**

**Ans. (i)** On heating, wax melts (physical change) but on burning it forms carbon dioxide (chemical change).

**(ii)** On heating, water converts to water vapours (physical change) but on passing electricity through it, it splits into hydrogen and oxygen (chemical change).

**Q.7. Why you are advised not to play with fireworks?**

**Ans.** Explosion of firework is a chemical change and produces heat, light, sound and unpleasant gases that pollute the atmosphere, so it is advised not to play with fireworks.

**Q.8. When chemical reaction takes place, what changes accompany the formation of new substances?**

**Ans.** The following changes accompany the formation of new substances: change in state, colour, temperature, odour, sound may be produced or gas may evolve.

## Long Answer Questions

**Q.1. Give two examples for each of the following cases:**

- a. Physical changes which are reversible.
- b. Physical changes which are not reversible.
- c. Chemical changes.

[NCERT Exemplar]

**Ans. (a) (i)** Folding of paper

**(ii)** Melting of ice

**(b) (i)** Tearing of paper

**(ii)** Breaking of glass

**(c) (i)** Reaction between vinegar and baking soda

**(ii)** Burning of a matchstick

**Q.2. Give an example of a chemical reaction for each of the following situations:**

- a. A change in colour is observed.
- b. A gas is evolved.
- c. Sound is produced.
- d. Formation of precipitate.
- e. Change of state from liquid to gas.
- f. Change of state from gas to liquid.

[NCERT Exemplar]

**Ans. (a)** Reaction between copper sulphate solution and zinc metal. The blue colour of the copper sulphate solution fades away and a red brown metallic copper is formed.

**(b)** Reaction between baking soda and vinegar. Baking soda on reaction with vinegar produces carbon dioxide.

**(c)** Burning of crackers.

**(d)** Reaction of silver nitrate and potassium chloride. A precipitate of silver chloride is formed.

**(e)** When water is heated above boiling point, it converts into vapours.

**(f)** Water droplets appear on the outside of a bottle containing cold water.

**Q.3. If you leave a piece of iron in the open for a few days, it acquires a film of brownish substance, called rust.**

- Do you think rust is different from iron?
- Can you change rust back into iron by some simple methods?
- Do you think formation of rust from iron is a chemical change?
- Give two other examples of a similar type of change.

[NCERT Exemplar]

Ans. (a) Yes, rust is chemically different from iron.

(b) No

(c) Yes, it is a chemical change.

(d) (a) Setting of curd from milk.

(b) Burning of magnesium ribbon to form magnesium oxide.

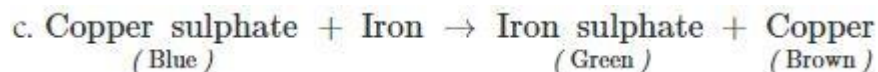
**Q.4. A student took a solution of copper sulphate in a beaker and put a clean iron nail into it and left it for about an hour.**

[NCERT Exemplar]

Ans. (a) (i) Colour of the solution in the beaker changes from blue to green.

(ii) A brown coloured deposit is found on the surface of the iron nail.

(b) The changes are chemical in nature as new substances, iron sulphate (green) and copper (brown) are formed.



**Q.5. Distinguish between the following.**

**Q. Physical change and Chemical change**

Ans.

S.No	Physical change	Chemical change
(i)	A change in which only physical properties of any substance get changed.	A change in which composition and chemical properties of the substance get changed.
(ii)	No new substance is formed.	New substances are formed.
(iii)	For example, dissolution of sugar in water.	For example, burning of a candle.

**Q. Exothermic reaction and Endothermic reaction**

Ans.

<b>S.No.</b>	<b>Exothermic reaction</b>	<b>Endothermic reaction</b>
<b>(i)</b>	It is a reaction in which heat energy is released.	It is a reaction which requires energy to take place.
<b>(ii)</b>	It is a spontaneous reaction.	It is a non-spontaneous reaction.

## HOTS (Higher Order Thinking Skills)

**Q.1. A magnesium strip is burnt. The ash obtained is dissolved in water. What kind of changes are these? Write word equations for these.**



**Ans.** These are chemical changes.

**Q.2. Why do iron articles rust faster in Mumbai than in Delhi?**

**Ans.** Since Mumbai is a coastal region, the moisture content in the air is more as compared to that in Delhi. Therefore, iron articles rust faster.