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.

a. **Do you think rust is different from iron?**
b. **Can you change rust back into iron by some simple methods?**
c. **Do you think formation of rust from iron is a chemical change?**
d. **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.

c. $\underset{(\text{Blue})}{\text{Copper sulphate}} + \text{Iron} \rightarrow \underset{(\text{Green})}{\text{Iron sulphate}} + \underset{(\text{Brown})}{\text{Copper}}$

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.

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