CHEMICAL REACTIONS AND EQUATIONS

Objective Type Questions

(1 Mark each)

1. A red brown gas is released along with O_2 and lead oxide on heating lead nitrate. It is an example of
   (a) combination reaction (b) oxidation reaction
   (c) decomposition reaction (d) reduction reaction
2. What are the coefficients of the correctly balanced equation?

$$?Fe_2O_3 + ?CO \longrightarrow ?Fe + ?CO_2$$

   (a) 0, 2, 2, 3 (b) 1, 3, 2, 3 (c) 1, 2, 2, 2 (d) 2, 6, 4, 3

Directions (Q. Nos. 3-4) *In the following questions a statement of Assertion is followed by a statement of Reason. Mark the correct choice as*

(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If Reason is true but Assertion is false.
(e) If both Assertion and Reason are false.

3. **Assertion** Chemical reaction changes the physical and chemical state of a substance.

   Reason When electric current is passed through water (liquid), it decomposes to produce hydrogen and oxygen gases.

$$2H_2O \xrightarrow[\text{current}]{\text{Electric}} 2H_2 + O_2$$

4. **Assertion** In a balanced chemical equation, total mass of the each element towards reactant side = total mass of the same element towards product side.

   Reason Mass can neither be created nor destroyed during a chemical change.
5. Name and state the law which is kept in mind while we balance a chemical equation.
6. Why is decomposition reaction called opposite of combination reaction?

Note : *Solutions to questions given in 'Qualifying Round' are given on page no. 207-230.*

Short Answer Type Questions

(3 Marks each)

7. What information do we get from a balanced chemical equation?

8. In a container, solid calcium oxide was taken and water was added slowly to it.

(a) State the two observations made in the experiment.

(b) Write the name and chemical formula of the product formed.

9. Give reasons:

(a) Magnesium ribbon should be cleaned before burning in air.

(b) Photosynthesis is considered as an endothermic reaction.

(c) Combustion reaction is an oxidation reaction.

Long Answer Type Questions

(5 Marks each)

10. (a) A student has been collecting silver coins and copper coins. After some days, when she took out the coins to count, she observed a black coating on silver coins and green coating on copper coins. Which chemical phenomenon is responsible for such coatings? Write the chemical reactions involved.

(b) Name the gas that is used by manufacturers to fill the packets of chips to prevent them from getting oxidised.

11. Consider the chemical equation given below and answer the questions that follow.

$$ZnO + C \longrightarrow Zn + CO$$

(a) Name the substance which is getting oxidised.

(b) Name the substance which is getting reduced.

(c) Name the oxidising agent.

(d) Name the reducing agent.

(e) What type of a reaction does this equation represent?