

**CLASS X**  
**CHEMICAL REACTIONS AND EQUATIONS**  
**WORKSHEET-1**

**1 MARKS QUESTIONS:**

- 1) What is meant by a chemical reaction ?
- 2) On what basis is a chemical equation balanced? (**Delhi 2010, Foreign 2008**)
- 3) Write a balanced chemical equation for the reaction between sodium chloride and silver nitrate indicating the physical state of the reactant and the products. (**Foreign 2010**)
- 4) What are the various in which a chemical equation can be made more informative.
- 5) Identify the type of reaction in the following examples. (**Delhi 2008C**)  
a)  $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$     b)  $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$   
c)  $2\text{Pb}(\text{NO}_3)_2 \rightarrow 2\text{PbO} + 4\text{NO}_2 + \text{O}_2$     d)  $\text{Zn} + 2\text{AgNO}_3 \rightarrow \text{Zn}(\text{NO}_3)_2 + 2\text{Ag}$

**2 MARKS QUESTIONS:**

- 6) Using balanced chemical equation explain the difference between a displacement reaction and double displacement reaction. (**CBSE- 2012 , 2011**)
- 7) Define the following terms with examples.  
a) Oxidation    b) Reduction    c) Corrosion    d) Redox Reaction
- 8) In the reaction represented by the equation  $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$   
a) Name the substance oxidized & the substance reduced  
b) Name the oxidizing agent & the reducing agent
- 9) A colorless lead salt when heated produces a yellow residue and brown fumes.  
a) Name the lead salt. b) Name the brown fumes.  
c) Write a chemical equation of the reaction involved
- 10) What are antioxidants ? why are they added to fat and oil containing food ?

**3 MARKS QUESTIONS:**

- 11) a) What is the colour of  $\text{FeSO}_4$  crystals ? How does this colour change after heating ?  
b) Name the products formed on strongly heating ferrous sulphate crystals . What type of chemical reaction occurs in this change ? Also write the chemical equation.
- 12) Write balanced chemical equations with state symbols for the following reactions.  
a) Sodium hydroxide solution reacts with hydrochloric acid solution to

produce sodium chloride solution and water .

- b) Barium chloride solution reacts with aluminium sulphate solution to form a precipitate of barium sulphate and aluminium chloride solution .
- c) Potassium reacts with water to give potassium hydroxide and hydrogen .

**13) Balance the following equations. (CBSE- 2008 to 2012)**

- a)  $\text{MnO}_2 + \text{HCl} \rightarrow \text{MnCl}_2 + \text{H}_2\text{O} + \text{Cl}_2$       ( b)  $\text{NH}_3 + \text{O}_2 \rightarrow \text{NO} + \text{H}_2\text{O}$
- c)  $\text{C}_4\text{H}_{10} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$       (d)  $\text{Fe}_2(\text{SO}_4)_3 + \text{BaCl}_2 \rightarrow \text{FeCl}_3 + \text{BaSO}_4$
- e)  $\text{Cu} + \text{HNO}_3 \rightarrow \text{NO}_2 + \text{H}_2\text{O} + \text{Cu}(\text{NO}_3)_2$

**14) What type of chemical reaction takes place when :** a) A magnesium wire is burnt in air. b) Lime – stone is heated. c) Silver bromide is exposed to sunlight. d) Electricity is passed through water. e) Ammonia and hydrogen chloride are mixed. f) A white salt on heating decomposes to give brown fumes.

**15)** What happens when Zn metal is dipped in  $\text{CuSO}_4$  solution ? Give the chemical reaction involved . State which is more reactive , Zn or Cu?

**16)** Define a combination reaction . Why are decomposition reactions called the opposite of Combination reaction ? Write equations for these reactions .

**17)** On heating blue coloured powder of copper (II) nitrate in boiling tube , copper oxide (black) , oxygen gas and a brown gas 'x' is formed . **(DELHI-2010 )**

- a) Write a balanced chemical equation of the reaction.
- b) Identify the brown gas 'x' evolved      c) Identify the type of reaction .

**18)** What is rancidity? Mention any two ways by which it can be prevented.

**{CBSE (CCE) 2012}**

**VALUE BASED QUESTION:**

**19)** Anjali told her chemistry teacher that biofuels should be used instead of fossil fuels. She read in science magazine that ( Researchers have found that one of the most common bacteria E.coli can digest simple sugars from plant waste and turn it into biofuel. Biofuels made from plants and animal waste, are alternative to petroleum based fuels. )

- A) What is biofuel?    B) What are advantages of biofuel?    C) Is preparation of biofuel a physical or chemical process?    D) Why is biofuel better than petroleum products?
- E) What values are possessed by Anjali who wants to use biofuel?

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