Learnzy Academy

Worksheet: Chemical Reactions and Equations

1. What do you mean by a precipitation reaction? Explain by giving examples.
2. Why does the colour of copper sulphate solution change when an iron nail is dipped in it?
3. What happens when dilute hydrochloric acid is added to iron fillings? Tick the correct answer. (a) Hydrogen gas and iron chloride are produced. (b) Chlorine gas and iron hydroxide are produced. (c) No reaction takes place. (d) Iron salt and water are produced
4. Identify the substances that are oxidised and the substances that are reduced in the following reactions. (i) $4Na(s) + O2(g) \rightarrow 2Na2O(s)$ (ii) $CuO(s) + H2(g) \rightarrow Cu(s) + H2O(l)$
5. In the refining of silver, the recovery of silver from silver nitrate solution involved displacement by copper metal. Write down the reaction involved.
6. What does one mean by exothermic and endothermic reactions? Give examples.
7. A shiny brown coloured element ‘X’ on heating in air becomes black in colour. Name the element ‘X’ and the black coloured compound formed.
8. Hydrogen being a highly inflammable gas and oxygen being a supporter of combustion, yet water which is a compound made up of hydrogen and oxygen is used to extinguish fire. Why?
9. Why is respiration considered an exothermic reaction? Explain
10. Oil and fat containing food items are flushed with nitrogen. Why?
11. What is meant by a chemical reaction?
12. Write a balanced chemical equation with state symbols for the following reactions. (i) Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride. (ii) Sodium hydroxide solution (in water) reacts with hydrochloric acid solution (in water) to produce sodium chloride solution and water
13. Write the balanced equation for the following chemical reactions. (i) Hydrogen + Chlorine $\rightarrow$ Hydrogen chloride (ii) Barium chloride + Aluminium sulphate $\rightarrow$ Barium sulphate + Aluminium chloride (iii) Sodium + Water $\rightarrow$ Sodium hydroxide + Hydrogen
14. Fe■O■ + 2Al $\rightarrow$ Al■O■ + 2Fe The above reaction is an example of a (a) combination reaction. (b) double displacement reaction. (c) decomposition reaction. (d) displacement reaction.
15. What is the difference between displacement and double displacement reactions? Write equations for these reactions.
16. What is a balanced chemical equation? Why should chemical equations be balanced?

17. Why are decomposition reactions called the opposite of combination reactions? Write equations for these reactions

18. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light or electricity.

19. 1 g of copper powder was taken in a China dish and heated. What change takes place on heating? When hydrogen gas is passed over this heated substance, a visible change is seen in it. Give the chemical equations of reactions, the name and the colour of the products formed in each case.

20. A solution of substance ‘X’ is used for white washing. What is the substance ‘X’? State the chemical reaction of ‘X’ with water.