

Worksheet: Chemical Reactions and Equations

1. What do you mean by a precipitation reaction? Explain by giving examples.
2. Why are decomposition reactions called the opposite of combination reactions? Write equations for these reactions
3. $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$ The above reaction is an example of a (a) combination reaction. (b) double displacement reaction. (c) decomposition reaction. (d) displacement reaction.
4. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light or electricity.
5. Why does the colour of copper sulphate solution change when an iron nail is dipped in it?
6. What is a balanced chemical equation? Why should chemical equations be balanced?
7. What is meant by a chemical reaction?
8. A solution of a substance 'X' is used for whitewashing. (i) Name the substance 'X' and write its formula. (ii) Write the reaction of the substance 'X' named in (i) above with water.
9. 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
10. Identify the substances that are oxidised and the substances that are reduced in the following reactions. (i) $4\text{Na(s)} + \text{O}_2\text{(g)} \rightarrow 2\text{Na}_2\text{O(s)}$ (ii) $\text{CuO(s)} + \text{H}_2\text{(g)} \rightarrow \text{Cu(s)} + \text{H}_2\text{O(l)}$
11. Oil and fat containing food items are flushed with nitrogen. Why?
12. What does one mean by exothermic and endothermic reactions? Give examples.
13. Why is respiration considered an exothermic reaction? Explain
14. 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.
15. What is the difference between displacement and double displacement reactions? Write equations for these reactions.
16. A shiny brown coloured element 'X' on heating in air becomes black in colour. Name the element 'X' and the black coloured compound formed.
17. 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?

- 18.** Why should a magnesium ribbon be cleaned before burning in air?
- 19.** 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
- 20.** 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