

DELHI PUBLIC SCHOOL, GAYA

WORKSHEET-1

Subject : Chemistry

Class : X

Answer the following questions:

- Which of the following is not a physical change?
 - Boiling of water to give water vapour
 - Melting of ice to give water
 - Dissolution of salt in water
 - Combustion of Liquefied Petroleum Gas (LPG)
- Which one of the following processes involve chemical reactions?
 - Storing of oxygen gas under pressure in a gas cylinder
 - Liquefaction of air
 - Keeping petrol in a china dish in the open
 - Heating copper wire in presence of air at high temperature
- In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved at reaction temperature?
 - $2\text{H}_2(\text{l}) + \text{O}_2(\text{l}) \rightarrow 2\text{H}_2\text{O}(\text{g})$
 - $2\text{H}_2(\text{g}) + \text{O}_2(\text{l}) \rightarrow 2\text{H}_2\text{O}(\text{l})$
 - $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{l})$
 - $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{g})$
- Complete the missing components / variables give as x and y in the following reaction.
 - $\text{Pb}(\text{NO}_3)_2(\text{aq}) + 2\text{KI}(\text{aq}) \rightarrow \text{PbI}_2(x) + 2\text{KNO}_3(y)$
 - $\text{Cu}(\text{s}) + 2\text{AgNO}_3(\text{aq}) \rightarrow \text{Cu}(\text{NO}_3)_2(\text{aq}) + x(\text{s})$
 - $\text{Zn}(\text{s}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{ZnSO}_4(x) + \text{H}_2(y)$
- Write the balanced chemical equations for the following reactions :
 - Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and sodium hydrogencarbonate.
 - Sodium hydrogencarbonate on reaction with hydrochloric acid gives sodium chloride, water and liberates carbon dioxide.
 - Copper sulphate on treatment with potassium iodide precipitates cuprous iodide (Cu_2I_2), liberates iodine gas and also forms potassium sulphate.
- Grapes hanging on the plant do not ferment but after being plucked from the plant can be fermented. Under what conditions do these grapes ferment? Is it a chemical or a physical change?

7. Which among the following are physical or chemical changes?
- Evaporation of petrol
 - Burning of Liquefied Petroleum Gas (LPG)
 - Heating of an iron rod to red hot.
 - Curdling of milk
 - Sublimation of solid ammonium chloride
8. A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of light. If the burning ribbon is now placed in an atmosphere of nitrogen, it continues to burn and forms a compound Y.
- Write the chemical formulae of X and Y.
 - Write a balanced chemical equation, when X is dissolved in water.
9. Why should a magnesium ribbon be cleaned before burning in air?
10. Write the balanced equation for the following chemical reactions.
- Hydrogen + Chlorine \rightarrow Hydrogen chloride
 - Barium chloride + Aluminium sulphate \rightarrow Barium sulphate + Aluminium chloride
 - Sodium + Water \rightarrow Sodium hydroxide + Hydrogen
11. Write a balanced chemical equation with state symbols for the following reactions.
- Solutions of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.
 - Sodium hydroxide solution (in water) reacts with hydrochloric acid solution (in water) to produce sodium chloride solution and water.
12. What is a balanced chemical equation? Why should chemical equations be balanced?
13. Translate the following statements into chemical equations and then balance them.
- Hydrogen gas combines with nitrogen to form ammonia.
 - Hydrogen sulphide gas burns in air to give water and sulphur dioxide.
 - Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate.
 - Potassium metal reacts with water to give potassium hydroxide and hydrogen gas.
14. Balance the following chemical equations.
- $\text{HNO}_3 + \text{Ca(OH)}_2 \rightarrow \text{Ca(NO}_3)_2 + \text{H}_2\text{O}$
 - $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$
 - $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{AgCl} + \text{NaNO}_3$
 - $\text{BaCl}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + \text{HCl}$
15. Write the balanced chemical equations for the following reactions.
- Calcium hydroxide + Carbon dioxide \rightarrow Calcium carbonate + Water
 - Zinc + Silver nitrate \rightarrow Zinc nitrate + Silver
 - Aluminium + Copper chloride \rightarrow Aluminium chloride + Copper
 - Barium chloride + Potassium sulphate \rightarrow Barium sulphate + Potassium chloride