Chemical Reactions and Equations

WORKSHEET

1. What do you mean by a precipitation reaction? Explain by giving examples.
2. Balance the following chemical equations.
   (a) $HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + H_2O$
   (b) $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$
   (c) $NaCl + AgNO_3 \rightarrow AgCl + NaNO_3$
   (d) $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + HCl$
3. Translate the following statements into chemical equations and then balance them.
   (a) Hydrogen gas combines with nitrogen to form ammonia.
   (b) Hydrogen sulphide gas burns in air to give water and sulpur dioxide.
   (c) Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate.
   (d) Potassium metal reacts with water to give potassium hydroxide and hydrogen gas.
4. Write the balanced chemical equation for the following and identify the type of reaction in each case.
   (a) Potassium bromide(aq) + Barium iodide(aq) → Potassium iodide(aq) + Barium bromide(s)
   (b) Zinc carbonate(s) → Zinc oxide(s) + Carbon dioxide(g)
   (c) Hydrogen(g) + Chlorine(g) → Hydrogen chloride(g)
   (d) Magnesium(s) + Hydrochloric acid(aq) → Magnesium chloride(aq) + Hydrogen(g)
5. A shiny brown coloured element ‘X’ on heating in air becomes black in colour. Name the element ‘X’ and the black coloured compound formed.
6. Write the balanced chemical equation involved in the process of photosynthesis.
7. (i) Why is respiration considered as an exothermic reaction?
   (ii) Write chemical name and the formula of the brown gas produced during thermal decomposition of lead nitrate.
   (iii) Why do chips manufactures flush bags of chips with gas such as nitrogen?
8. Lead nitrate solution is added to a test tube containing potassium iodide solution.
   (a) Write the name and colour of the compound precipitated.
   (b) Write the balanced chemical equation for the reaction involved.
   (c) Name the type of this reaction justifying your answer.