**COSTAATT**

**CHEM111 – Concepts in Chemistry I**

**Lesson 6 – Worksheet**

1. Write balanced chemical equations for the following reactions (**metals with acids**):

(a) The reaction of calcium with hydrochloric acid

(b) The reaction of cobalt with hydrochloric acid

(c) The reaction of iron with sulphuric acid

2. Write balanced chemical equations for the following reactions (**metal oxides with acids**):

(a) The reaction of iron(II) oxide with sulphuric acid

(b) The reaction of iron(II) oxide with nitric acid

(c) The reaction of copper(II) oxide with sulphuric acid

3. Write balanced chemical equations for the following reactions (**metal hydroxides with acids**):

(a) The reaction of potassium hydroxide with hydrochloric acid

(b) The reaction of calcium hydroxide with hydrochloric acid

(c) The reaction of magnesium hydroxide with hydrochloric acid

4. Write balanced chemical equations for the following reactions (**carbonates with acids**)

(a) The reaction of copper(II) carbonate with hydrochloric acid

(b) The reaction of calcium carbonate with nitric acid

(c) The reaction of magnesium carbonate with sulphuric acid

5. Sort the following compounds into two lists – those which are soluble in water, and those which are insoluble.

sodium chloride, lead(II) sulphate, zinc nitrate, calcium carbonate, iron(III) sulphate, lead(II) chloride, potassium sulphate, copper(II) carbonate, silver chloride, aluminium nitrate, barium sulphate, ammonium chloride, magnesium nitrate, calcium sulphate, sodium phosphate, nickel(II) carbonate, chromium(III) hydroxide, potassium dichromate(VI).