**COSTAATT**

**CHEM092 – Introduction to Concepts in Chemistry II**

**Lesson 6 – Worksheet**

1. 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).

2. Balance the following equations, and then classify the reactions as synthesis, decomposition, single displacement, ionic precipitation or neutralisation reactions:

(a) H2CO3(g) → H2O(l) + CO2(g)

(b) Fe(s) + Cl2(g) → FeCl3(s)

(c) Zn(s) + HCl(aq) → ZnCl2(aq) + H2(g)

(d) NaOH(aq) + H2SO4(aq) → Na2SO4(aq) + H2O(l)

(e) AgNO3(aq) + MgBr2(aq) → AgBr(s) + Mg(NO3)2(aq)

3. (a) When a zinc strip is placed in lead nitrate solution, crystals grow. Explain why.

(b) What happens when a lead strip is placed in silver nitrate solution?

(c) Write word and balanced symbol equations for the reaction in part (a).

(d) Write the ionic equation for the reaction in part (a).

(e) Why is the reactivity series of metals useful to us?