MINISTRY OF EDUCATION, HERITAGE AND ARTS
YEAR 12 CHEMISTRY
REVISION WORKSHEET 4

Write the answers to the following questions in your exercise/activity books.

Strand 3: Reactions

1. Determine the concentration (**in mol L^{-1}**) of a 500 mL of magnesium chloride solution containing 2.4 g of the salt. **(2 marks)**

2. During an experiment, 500 mL of distilled water was added to a 500 mL of 1 mol L^{-1} solution of sodium chloride. Determine the concentration of the diluted solution. **(3 marks)**

3. State how the following glassware is cleaned during a titration experiment.

   (i) Pipette **(1 mark)**

   (ii) Conical flask **(1 mark)**

   (iii) Burette **(1 mark)**

4. State why it is important to perform a pilot titration before the actual titration is carried out. **(1 mark)**

5. State, with reasons, whether the chemical species in **bold** in the following reactions has been oxidised or reduced.

   (i) $Zn_{(s)} + \mathbf{Pb^{2+}}_{(aq)} \rightarrow Zn^{2+}_{(aq)} + Pb_{(s)}$ **(2 marks)**

   (ii) $H_2O_{(l)} + \mathbf{CO}_{(g)} \rightarrow H_{2(g)} + CO_{2(g)}$ **(2 marks)**

6. Define **Le Chateliers' Principle**. **(1 mark)**

7. Consider the reaction equation given below and answer the questions that follow.

   $$\mathbf{N_{2(g)} + O_{2(g)} \rightleftharpoons 2NO_{(g)} \qquad \triangle H = +176\ kJ\ mol^{-1}}$$

   For the above reaction, predict the **shift in equilibrium** if:

   (i) the temperature is decreased. **(1 mark)**

   (ii) NO gas is removed as it is formed. **(1 mark)**