MINISTRY OF EDUCATION, HERITAGE AND ARTS
YEAR 12 CHEMISTRY
REVISION WORKSHEET 5

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

Strand 3: Reactions

1. Consider the system at equilibrium given below and answer the questions that follow.

$$PCl_{3(g)} + Cl_{2(g)} \rightleftharpoons PCl_{5(g)}$$

(i) State how the **concentration of PCl_5 gas** would change if:

(a) more PCl_3 gas and Cl_2 gas is added. **(1 mark)**
(b) the pressure is decreased. **(1 mark)**

(ii) Predict the **shift in equilibrium** if:

(a) a catalyst is added. **(1 mark)**
(b) the pressure is increased. **(1 mark)**

2. Consider the system at equilibrium given below and answer the question that follows.

$$2NO_{2(g)} \rightleftharpoons N_2O_{4(g)} \qquad \triangle H = -54 \text{ kJ mol}^{-1}$$

If the volume of the container is fixed, describe three changes in conditions which would increase the amount of $N_2O_{4\,(g)}$. **(3 marks)**

3. Consider the system at equilibrium given below and answer the question that follows.

$$C_{(s)} + H_2O_{(g)} \rightleftharpoons CO_{(g)} + H_{2(g)} \qquad \triangle H = +131 \text{ kJ mol}^{-1}$$

State how the **concentration of H_2 gas** would change if:

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

(ii) $CO_{(g)}$ is removed from the system as it is formed. **(1 mark)**

THE END