MINISTRY OF EDUCATION, HERITAGE AND ARTS
YEAR 12 CHEMISTRY
REVISION WORKSHEET 6

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

Strand 3: Reactions

1. Identify each of the following reactions as endothermic or exothermic. **(5 marks)**

   a. Melting of ice.

   b. Burning of wood.

   c. Two chlorine atoms combining to form a chlorine molecule.

   d. Dissolving ammonium nitrate in water.
      (Note: the temperature of water decreased).

   e. Addition of zinc metal to dilute hydrochloric acid solution.
      (Note: During the reaction, hydrogen gas was released and the reaction vessel became warm).

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

   $$2C_{(s)} \ + \ O_{2(g)} \ \rightarrow \ 2CO_{(g)} \qquad \Delta H = \text{-230 kJ mol}^{-1}$$

   a. Determine the amount of heat energy released when 6 moles of oxygen reacts. **(3 marks)**

   b. Determine the amount of heat energy released when 6 g of carbon burns. **(3 marks)**

3. When 6.0 g of magnesium burns in excess oxygen, magnesium oxide forms and 150 kJ of energy is released.

   Determine the amount of heat released when 2 mol of magnesium burns. **(3 marks)**

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

   $$2SO_{2(g)} \ + \ O_{2(g)} \ \rightarrow \ 2SO_{3(g)} \qquad \Delta H = \text{-188kJ mol}^{-1}$$

   a. Calculate the amount of energy released when 32.0 g of SO_2 is burnt in excess oxygen. **(3 marks)**

   b. Calculate the mass (in grams) of SO_2 needed to produce 3000kJ of energy. **(3 marks)**

THE END