MINISTRY OF EDUCATION, HERITAGE AND ARTS
YEAR 13 CHEMISTRY
REVISION WORKSHEET 3

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

Strand 2: Investigating Matter **Sub-strand: Atomic Structure and Bonding**

1. (i) Define **ionisation energy**. **(1 mark)**

   (ii) Explain why the ionisation energy of elements **decreases down the group** of a Periodic Table. **(2 marks)**

   (iii) Explain why sodium has a **very low 1st ionisation energy (496 kJ mol^{-})** compared to its **2nd ionisation energy (4562 kJ mol^{-1})**. **(2 marks)**

2. Arrange the following elements from **lowest** to **highest** electronegativity.

Fluorine	Lithium	Nitrogen	Boron

(2 marks)

3. Compare the atomic radii of **calcium atom (Ca)** and **calcium ion (Ca^{2+})** to answer the following questions.

   (i) Determine whether **calcium atom (Ca)** or **calcium ion (Ca^{2+})** has a smaller radius. **(1 mark)**

   (ii) Provide a reason for your answer to part (i) above. **(2 marks)**

4. Name the type of **intermolecular attraction** present between the following:

   (i) Two chlorine molecules **(1 mark)**

   (ii) Water and sodium chloride **(1 mark)**

   (iii) Two hydrochloric acid molecules **(1 mark)**

   (iv) Methanol and water **(1 mark)**

5. Define the following terms.

   (i) Vapour pressure **(1 mark)**

   (ii) Surface tension **(1 mark)**

6. Provide a reason for the following statements.

   (i) Iodine easily sublimes at a low temperature. **(2 marks)**

   (ii) Water has a high boiling point of 100 °C. **(2 marks)**

The End