Practice Question Set For A-Level
Subject : Chemistry
Paper-1 Topic: Inorganic 1

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Name of the Student:_____
Max. Marks : 13 Marks **Time : 13 Minutes**

Q1.

Ionisation energies provide evidence for the arrangement of electrons in atoms.

(a) Complete the electron configuration of the Mg^+ ion.

$1s^2$ _____

(1)

(b) (i) State the meaning of the term *first ionisation energy*.

_____

_____

_____

(2)

(ii) Write an equation, including state symbols, to show the reaction that occurs when the **second** ionisation energy of magnesium is measured.

_____

(1)

(iii) Explain why the second ionisation energy of magnesium is greater than the first ionisation energy of magnesium.

_____

_____

_____

(1)

(iv) Use your understanding of electron arrangement to complete the table by suggesting a value for the third ionisation energy of magnesium.

	First	Second	Third	Fourth	Fifth
Ionisation energies of magnesium / kJ mol^{-1}	736	1450		10 500	13 629

(1)

(c) State and explain the general trend in the first ionisation energies of the Period 3 elements sodium to chlorine.

Trend _____

Explanation _____

_____

_____

(3)

(d) State how the element sulfur deviates from the general trend in first ionisation energies across Period 3. Explain your answer.

How sulfur deviates from the trend _____

_____

Explanation _____

_____

_____

(3)

(e) A general trend exists in the first ionisation energies of the Period 2 elements lithium to fluorine. Identify **one** element which deviates from this general trend.

_____

(1)

(Total 13 marks)