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

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

(a) When aluminium is added to an aqueous solution of copper(II) chloride, $CuCl_2$, copper metal and aluminium chloride, $AlCl_3$, are formed. Write an equation to represent this reaction.

_____

(1)

(b) (i) State the general trend in the first ionisation energy of the Period 3 elements from Na to Ar.

_____

(ii) State how, and explain why, the first ionisation energy of aluminium does not follow this general trend.

_____

_____

_____

_____

(4)

(c) Give the equation, including state symbols, for the process which represents the second ionisation energy of aluminium.

_____

(1)

(d) State and explain the trend in the melting points of the Period 3 metals Na, Mg and Al.

Trend _____

Explanation _____

_____

_____

(3)
(Total 9 marks)

Downloaded from www.merit-minds.com

Q2.

(a) State the meaning of the term *first ionisation energy* of an atom.

_____

_____

(2)

(b) Complete the electron arrangement for the Mg^{2+} ion.

$1s^2$ _____

(1)

(c) Identify the block in the Periodic Table to which magnesium belongs.

_____

(1)

(d) Write an equation to illustrate the process occurring when the **second** ionisation energy of magnesium is measured.

_____

(1)

(e) The Ne atom and the Mg^{2+} ion have the same number of electrons. Give **two** reasons why the first ionisation energy of neon is lower than the third ionisation energy of magnesium.

Reason 1 _____

Reason 2 _____

(2)

(f) There is a general trend in the first ionisation energies of the Period 3 elements, Na – Ar

(i) State and explain this general trend.

Trend _____

Explanation _____

_____

_____

(ii) Explain why the first ionisation energy of sulphur is lower than would be predicted from the general trend.

_____

_____

_____

(5)

(Total 12 marks)

Downloaded from www.merit-minds.com