Practice Question Set For A-Level
Subject : Chemistry
Paper-1 Topic: Inorganic 2

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

(a) Explain why the atomic radii of the elements decrease across Period 3 from sodium to chlorine.

(2)

(b) Explain why the melting point of sulfur (S_8) is greater than that of phosphorus (P_4).

(2)

(c) Explain why sodium oxide forms an alkaline solution when it reacts with water.

(2)

(d) Write an ionic equation for the reaction of phosphorus(V) oxide with an excess of sodium hydroxide solution.

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(1)

(Total 7 marks)

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Q2.

This question is about the elements in Period 3 from sodium to phosphorus (Na to P) and their oxides.

(a) Element **X** forms an oxide that has a low melting point. This oxide dissolves in water to form an acidic solution.

(i) Deduce the type of bonding in this oxide of **X**.

_____

(1)

(ii) Identify element **X**.

_____

(1)

(iii) Write an equation for the reaction between this oxide of **X** and water.

_____

(1)

(b) Element **Y** reacts vigorously with water. An oxide of **Y** dissolves in water to form a solution with a pH of 14.

(i) Deduce the type of bonding in this oxide of **Y**.

_____

(1)

(ii) Identify element **Y**.

_____

(1)

(iii) Write an equation for the reaction of element **Y** with water.

_____

(1)

(iv) Write an equation for the reaction of this oxide of **Y** with hydrochloric acid.

_____

(1)

(c) Element **Z** forms an amphoteric oxide that has a very high melting point.

(i) Deduce the type of bonding in this oxide of **Z**.

_____

(1)

(ii) Write the formula of this amphoteric oxide.

_____

(1)

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(iii) State the meaning of the term amphoteric.

_____

(1)

(iv) Write two equations to show the amphoteric nature of the oxide of **Z**.

_____

_____

_____

(2)

(Total 12 marks)

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