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

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

A chemical company's records refer to the following acids

hydrochloric acid	nitric acid
hydrobromic acid	sulfuric acid
hydriodic acid	

A waste tank was thought to contain a mixture of two of these acids. A chemist performed test-tube reactions on separate samples from the waste tank. The results of these tests are shown below.

Test	Reagent	Observations
A	Barium chloride solution	White precipitate
B	Silver nitrate solution	White precipitate

(a) Use the result from Test **A** to identify an acid in the company's records which must be **present** in the waste tank.

_____

(1)

(b) Use the results from Test **A** and Test **B** to identify an acid in the company's records which must be **absent** from the waste tank.

_____

(1)

(c) The chemist suspected that the waste tank contained hydrochloric acid. State how the precipitate formed in Test **B** could be tested to confirm the presence of hydrochloric acid in the waste tank. State what you would observe.

Test _____

_____

Observation _____

_____

(2)

(d) Suggest one reason why carbonate ions could not be present in the waste tank.

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(1)

(Total 5 marks)

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Q2.

Both strontium carbonate and strontium sulfate are white solids which are insoluble in water. Strontium carbonate reacts with hydrochloric acid to produce a solution of strontium chloride. Strontium sulfate does not react with hydrochloric acid.

Describe how you would obtain strontium sulfate from a mixture of strontium carbonate and strontium sulfate.

_____

_____

_____

_____

_____

(Total 2 marks)

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Q3.

The elements in Group 2 can be used to show the trends in properties down a group in the Periodic Table.

(a) State the trend in atomic radius down Group 2 from Mg to Ba and give a reason for this trend.

Trend _____

Reason _____

(2)

(b) State and explain the trend in melting points of the elements down Group 2 from Mg to Ba.

Trend _____

Explanation _____

_____

_____

_____

(3)

(c) State the trend in reactivity with water of the elements down Group 2 from Mg to Ba.
Write an equation for the reaction of magnesium with steam and an equation for the reaction of strontium with water.

Trend _____

Equation for magnesium _____

Equation for strontium _____

(3)

(d) Sulfates of the Group 2 elements from Mg to Ba have different solubilities. Give the formula of the least soluble of these sulfates and state **one** use that depends upon the insolubility of this sulfate.

Formula _____

Use _____

(2)

(Total 10 marks)

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