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

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

Q1.

Sodium thiosulfate reacts with dilute hydrochloric acid as shown.

$$Na_2S_2O_3(aq) + 2\ HCl(aq) \rightarrow 2\ NaCl(aq) + SO_2\ (g) + S(s) + H_2O(l)$$

(a) Give the simplest ionic equation for this reaction.

_____

(1)

(b) The gas SO_2 is a pollutant.

State the property of SO_2 that causes pollution when it enters rivers.

Give an equation to show the reaction of SO_2 with water.

Property _____

Equation _____

(2)

(c) Draw a diagram to show the shape of a molecule of H_2O
Include any lone pairs of electrons.

State the H-O-H bond angle.

Explain this shape and bond angle.

Diagram

Bond angle _____

Explanation _____

_____

_____

_____

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(4)

(d) The initial rate of the reaction between sodium thiosulfate and hydrochloric acid can be monitored by measuring the time taken for a fixed amount of sulfur to be produced.

Describe an experiment to investigate the effect of temperature on the initial rate of this reaction.

Include

- a brief outline of your method
- how you will measure the time taken for a fixed amount of sulfur to be formed
- how you will present your results in graphical form
- a sketch of the graph that you would expect.

(6)

(Total 13 marks)

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