NAME: ……..……..

SCHOOL:……

DATE: .....

SULPHUR AND ITS COMPOUNDS

INSTRUCTIONS TO CANDIDATES

*Answer **ALL** questions in this paper in the spaces provided.*

1. In an attempt to prepare sulphur (IV) oxide gas, dilute sulphuric acid was reacted with barium carbonate. The yield of sulphur dioxide was found to be negligible. Explain (2mks)

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2. Explain why the bleaching action of chlorine is permanent while bleaching by Sulphur (IV) Oxide is temporary. (2marks)

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3. Write down the property of concentrated Sulpuric (VI) acid shown in the following reactions.

(2marks)

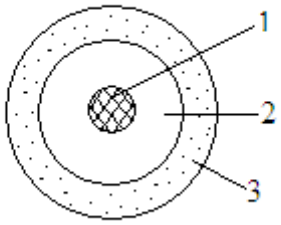
(a) $H_2C_2O_4.2H_2O_{(s)} \longrightarrow 2H_2O_{(l)} + CO_{2(g)} + CO_{(g)}$

Property: ----------

(b) $C_{(s)} + 2H_2SO_{4(l)} \longrightarrow CO_{2(g)} + 2H_2O_{(l)} + 2SO_{2(g)}$

Property: ……

4. The diagram below represents pipes used in Frasch pump for the extraction of sulpur



Which substance passes through tube?

1. _____
2. _____
3. _____

(3marks)

5. a) What property of concentrated sulphuric acid is illustrated by its action on:

(i) Sugar (½ mk)

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(ii) Copper metal (½ mk)

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b) Write the equation for the reaction of concentrated sulphuric acid with copper metal.

(1mk)

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6. A concentrated solution of Sulphuric (VI) acid contains 75% of H_2SO_4 with a specific gravity of 1.84.

a. **What** is the molarity of the sulphuric acid? (1½mks)

b. **What** volume of the acid is required to make 1 litre of 0.25M Sulphuric acid? (1 ½ mks)

7. Concentrated sulphuric (VI) acid can be used to dry sulphur (IV) oxide gas.

(a) **Explain** why concentrated sulphuric (VI) acid cannot be used to dry ammonia gas. (1mk)

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(b) **Name** the dry agent for ammonia gas. (1mk)

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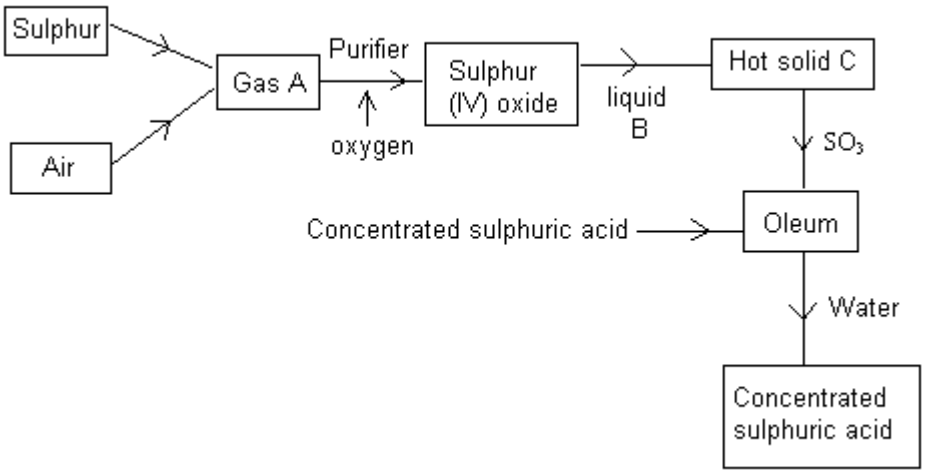
8. The flow chart below represents the main drops in the contact process.



(c) **Why** are the gases **A** and oxygen purified? (1mk)

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(d) **Write** an equation for the formation of Oleum. (1mk)

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(e) **What** is **C** likely to be? (1mk)

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9. Hydrogen sulphide gas was mistakenly dried using concentrated sulphuric (IV) acid.

a) Write an equation for the reaction that took place. (1mk)

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b) Using oxidation numbers, identify the reducing agent. (1mk)

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c) Write an equation for the chemical test of hydrogen sulphide. (1mk)

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10. A gas, G is prepared in the laboratory by adding concentrated sulphuric(VI)acid to a compound C. Gas G is denser than air and dissolves in water to form a solution which is strongly acidic.

(a) Name two gases that are most likely to be G. (2mks)

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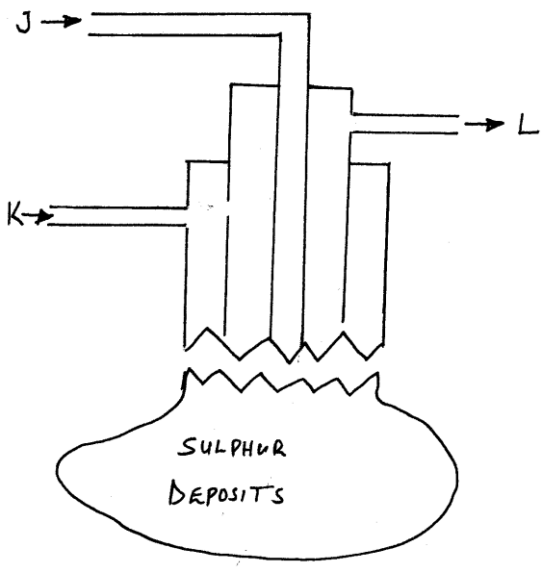
(c) Draw a diagram to show how gas G can be collected.

(1mk)

11. Sulphur is extracted from underground deposits by a process in which three concentric pipes are sunk down to the deposits as shown below.



(a) Name the process represented above. (1mk)

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(b) What is passed down pipe J? (1mk)

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(c) Name the two allotropes of sulphur (1mk)

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