

NAME.....ADM.NO.....CLASS.....

GATITU GIRLS' SECONDARY SCHOOL P.O. BOX 327-01030 GATUNDU

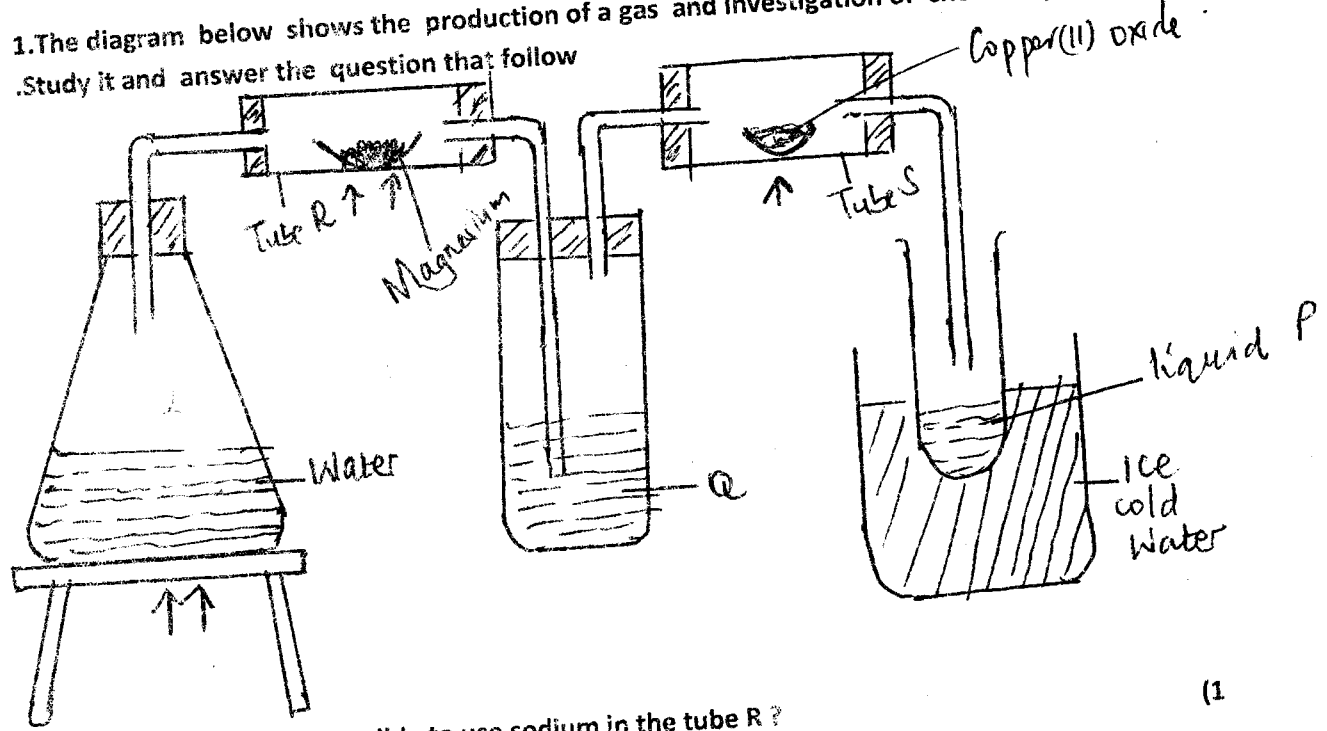
END OF TERM TWO EXAMINATION YEAR 2016

CHEMISTRY PAPER 2 FORM THREE

**INSTRUCTIONS**

- 1). Write your name ,class and admission no . in the spaces provided above
- 2). Answer all the questions in the spaces provided in the question paper
- 3) Any act of cheating will render your examination nullified

1.The diagram below shows the production of a gas and investigation of chemical properties .Study it and answer the question that follow



a) Why is it not possible to use sodium in the tube R ?  
(1 mark)

b) Write the equation for the reaction taking place in tube R  
(1mk)

c) Explain the observation made in tube S  
(1 mark)

d) Identify substance P (1mk)

e) State the role of ice cold water in the experiment. (1mk)

f) Substance Q acts as a drying agent in the experiment. Give substance that can be used as Q (1mk)

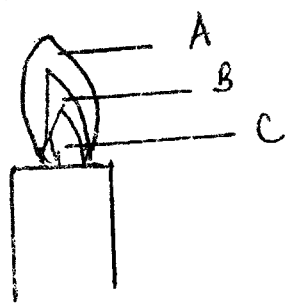
g) State two commercial uses of the gas produced in R (2mks)

h) Using dot (.) and cross(x) for electrons draw a diagram to show the bonding in (g) above. (2mks)

2. a) State two long term effects of drug abuse (1mk)

b) Give two reasons why most chemistry laboratory apparatus are made of glass. (2mks)

c) The following diagram represents a non luminous flame of a Bunsen burner.



i) Name the parts labeled

A

(1mk)

B

(1mk)

C

(1mk)

ii) Which of the parts of the flame above is the hottest?

(1mk)

iii) A nonluminous flame is preferred for heating. Give a reason

(1mk)

d.i) Name the other type of flame produced by the Bunsen burner

(1mk)

ii) Under what condition does the other type of flame produced by the Bunsen burner.

(1mk)

e) After use, a non luminous flame should be put off or adjusted to the other flame. Explain (1mk)

3. The grid below represents part of periodic table. Study it and answer the questions that follow. Letters do not represent the actual symbols of the elements.

E			H			J	
	N						
F	G				L		K
						M	

i) Identify element that gains electron more readily

(1mk)

ii) Which of the metals is the most reactive? Explain

(2mks)

iii) What name is given to the group which elements E and F belong?

(1mk)

iv) Explain why ionic radius of F is smaller than that of L.

(2mks)

v) Explain why element F formed ion more readily than E.

(2mks)

iv) Write down the equation for the reaction between G and J.

(1mk)

b) Study the table below and use it to answer the questions that follow.

substance	X	Y	W	U	S	T
Melting point(oC)	801	113	-39	-5	-10	1356
Boiling point (oC)	1410	119	457	54	-36	2860
Electrical conductivity of solid	Poor	Poor	Good	Poor	Poor	Poor
Electrical conductivity of molten	Good	Poor	Good	Poor	Poor	Poor

i) Name the type of bond that exist in :

(1mk)

W

(1mk)

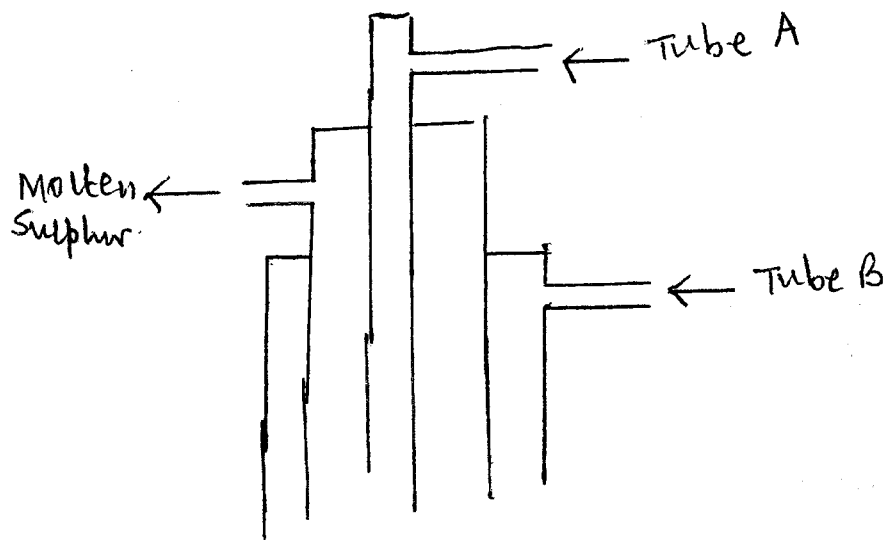
X

ii) Which substance has a molecular structure and exists in liquid state at room temperature?

(1mk)

iii) Both X and W conduct electricity in liquid state. Explain the difference in conductivity. (2mks)

4. Sulphur is extracted by Frasch process. Study the diagram below and answer the questions that follow.



a) Name the substances that pass through

Tube A

(1mk)

Tube B

(1mk)

b) What is the purpose of the substances that pass through tube A and that pass through tube B in the extraction of sulphur:

i) Substance A

(1mk)

ii) Substance B

(1mk)

c) What is the meaning of the word allotropes?

(1mk)

d) Give two examples of the allotropes of sulphur

(2mks)

e) What property of concentrated sulphuric acid is illustrated by its action on :

(1mk)

i) Sugar

(1mk)

ii) Copper metal

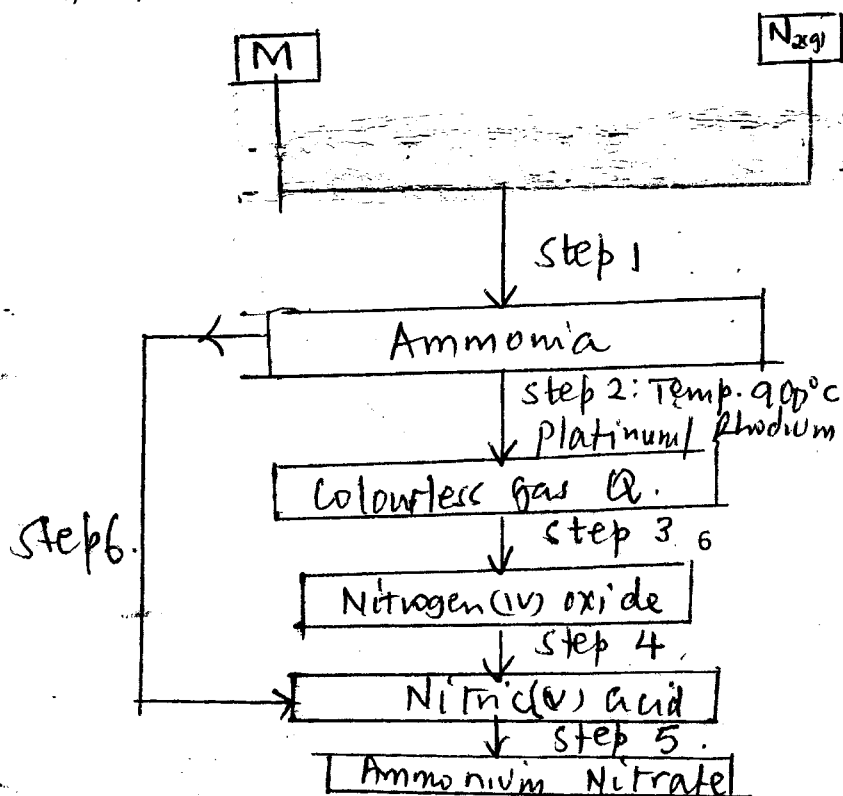
iii) Write an equation for the reaction between concentrated sulphuric acid and copper metal. (1mk)

5.a) Fractional distillation of liquid air usually produces nitrogen and oxygen as major products.

i) Name one substance that can be used to remove carbon (iv) oxide from air before it is changed to a liquid. (1mk)

ii) Describe how nitrogen is obtained from liquid air. (Boiling point of Nitrogen =  $-196^{\circ}\text{C}$ , Oxygen =  $-183^{\circ}\text{C}$ ) (2mks)

b) Study the flow below and answer the questions that follow



i) Name the ;

Element M

(1mk)

Gas Q

(1mk)

ii) Why is it necessary to use excess air in step 2 .

(1mk)

iii) Write the equation for the reaction taking place in step 6 .

(1mk)

iv) Name the catalyst used in step 1 .

(1mk)

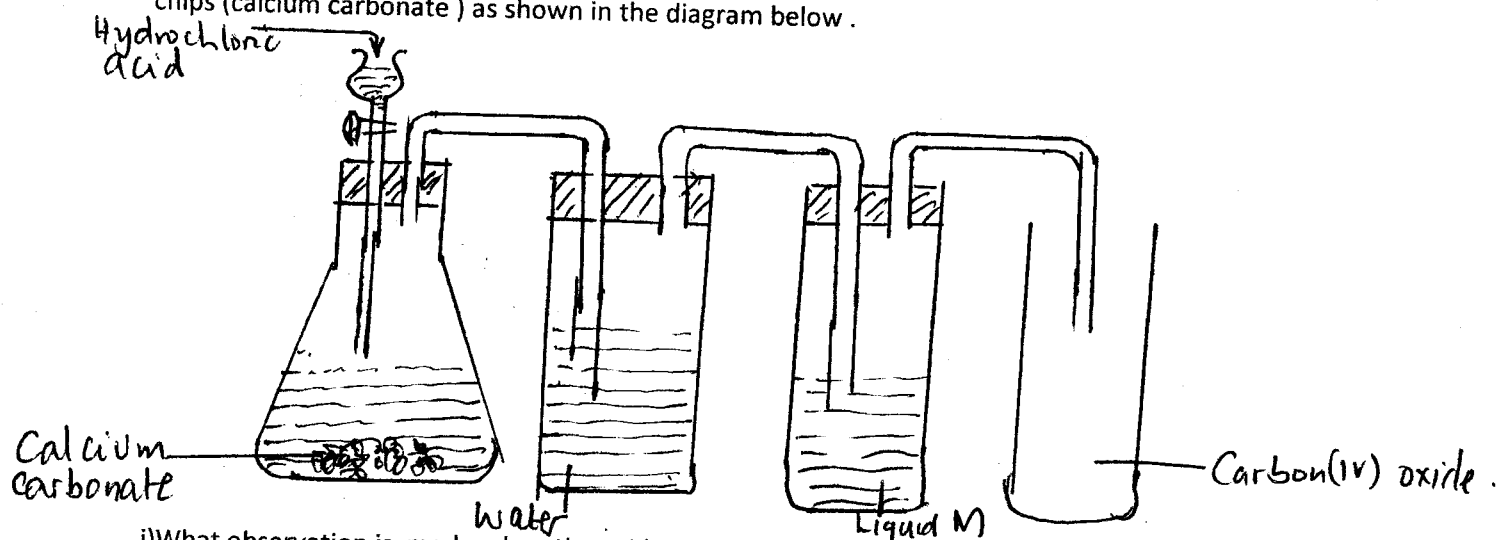
v) State one use of ammonia gas .

(1mk)

vi) State and explain the observation made if a sample of sulphur is heated in concentrated nitric (v) acid .

(2mks)

6. In the preparation of carbon (iv) oxide in the laboratory, dilute hydrochloric acid was added to marble chips (calcium carbonate) as shown in the diagram below .



i) What observation is made when the acid is added to the marble chips .

(1mk)

- ii) Why is dilute hydrochloric acid preferred to dilute sulphuric (vi) acid in the reaction? (1mk)
- iii) Why was the gas passed through water in the apparatus? (1mk)
- iv) Liquid M is a drying agent. Name a suitable drying agent that can be used to dry the gas. (1mk)
- v) Write an equation for the reaction taking place in the flask. (1mk)
- vi) Explain why calcium hydroxide is used to detect the presence of carbon(iv) oxide while sodium hydroxide is not used. (1mk)
- vii) Describe a simple test that can be used to distinguish between carbon (ii) oxide and carbon (iv) oxide. (1mk)
- viii) State the method of collection and reason for collection of carbon (iv) oxide as shown above. (2mks)
- ix) Give two physical properties of carbon (iv) oxide gas. (2mks)



7. Below is a brief outline of method used in preparing lead (ii) chloride. Lead carbonate was added to warm dilute nitric (v) acid. When carbonate with warm acid, more carbonate was added in excess. The mixture was then filtered. Some sodium chloride was added to the filtrate.

a.i) What observation is made when lead carbonate is added to warm nitric (v) acid? (1mk)

ii) What happens when sodium chloride is added to the filtrate. (1mk)

b) Write an equation for the reaction between :

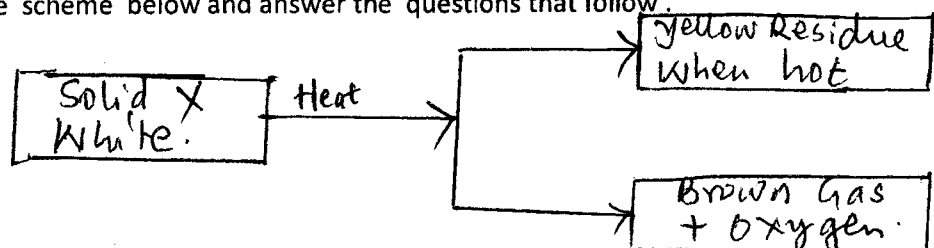
i) The carbonate and the acid. (1mk)

ii) The filtrate and sodium chloride (1mk)

c) Write ionic equation for the reaction in b(ii) above. (1mk)

d) Name the reaction that take place between the filtrate and sodium chloride. (1mk)

e) Study the scheme below and answer the questions that follow.



Name : i) Solid X

(1mk)

- ii)The yellow residue (1mk)
- iii)Write equation for the decomposition of solid X . (1mk)
- f)Name each of the process described below which takes place when salts are exposed to air after sometime:
- i)Anhydrous copper (ii) sulphate becomes wet . (1mk)
- ii)Anhydrous calcium chloride forms an aqueous solution . (1mk)
- iii)Fresh crystals of sodium carbonate  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$  becomes covered with white powder of  $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$  . (1mk)

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GOOD LUCK FROM CHEMISTRY DEPARTMENT