MOI HIGH SCHOOL
KABARAK

FORM 3 2026 END TERM 3 EXAMS

Paving Way For Kenya Certificate of Secondary Education Success

Name …….. Admission no…….
Candidate's Signature…… Date…….

FORM 3
CHEMISTRY
PAPER 2
TIME: 2Hours

INSTRUCTIONS TO THE CANDIDATES:

- Write your **name** and **admission number** in the spaces provided above
- **Sign** and write the **date** of examination in the spaces provided.
- Answer ***all*** the questions in the spaces provided.
- All working **must** be clearly shown where necessary.
- Mathematical tables and electronic calculators can be used.

For Examiners Use Only

Question	Maximum score	Candidate's score
1	13	
2	12	
3	11	
4	12	
5	11	
6	12	
7	9	
Total	**80**	

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1. The grid below shows a section of the periodic

K	L				M		N	P
	Q		R	S		T	V	
W								

a) Name the family into which element P belongs to **(1mk)**

……

……

b) Which two elements forms the most soluble carbonates **(1mk)**

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……

c) With a reason, identify elements in period 3 with the largest atomic radius **(2mks)**

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……

d) Write the formula of the compound formed between Q and M **(1mk)**

……

……

e) State two uses of element R and for each use , state property of element R that makes lts possible for the use

(i) Use **(1mk)**

……

……

Property **(1mk)**

……

……

(ii) Use **(1mk)**

……

……

Property **(1mk)**

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f) Using dots and cross, show bonding in the compound formed between Q and oxygen **(2mks)**

g) In terms of structure and bonding explain why the oxides of element T has relatively low boiling points **(2mks)**

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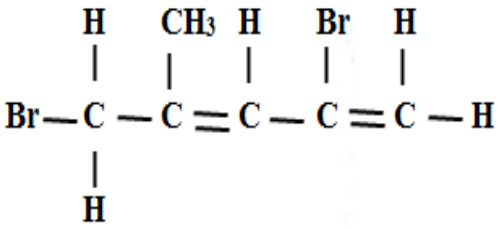
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2. (a) Name the following compounds **(3mks)**

(i) **$CH_3CH_2CH_2COOH$**

……

(ii)



……

(iii)**$CH_3CH_2OOCCH_2CH_3$**

……

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b) Two types of detergents P and Q can be represented as

P: R –COONa

Q : R —  **— OSO_3Na**

(i) Identify each type of the detergent **(2mks)**

……

……

(ii)Which of the two detergents is the best to use with hard water? Give a reason **(2mks)**

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(iii) State one advantage of detergent P **(1mk)**

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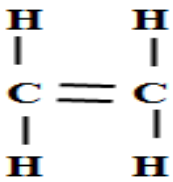
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(iv) State one disadvantage of detergent Q **(1mk)**

……

……

(c) An hydrocarbon can be represented as follows



(i) Identify the hydrocarbon **(1mk)**

……

(ii) Name two reagents that can reacted together to generate the hydrocarbon **(2mks)**

……

……

3.(a)Name two apparatus that can be used for determining mass in a laboratory **(2mks)**

……

……

(b) One of the flames produced by Bunsen burner is the luminous flame

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i) Explain why this flame is very bright **(1mk)**

……

……

ii) State two disadvantages of the luminous flame **(2mks)**

……

……

(c) Air is usually one of the substances that is considered as a mixture

(i) Identify the two most abundant component of air **(2mks)**

……

……

(ii) Give two reasons why the air is considered as a mixture **(2mks)**

……

……

(iii) One of the components of air is carbon (iv) oxide. Describe an experiment that can be used to prove the presence of carbon (iv) oxide in the air **(2mks)**

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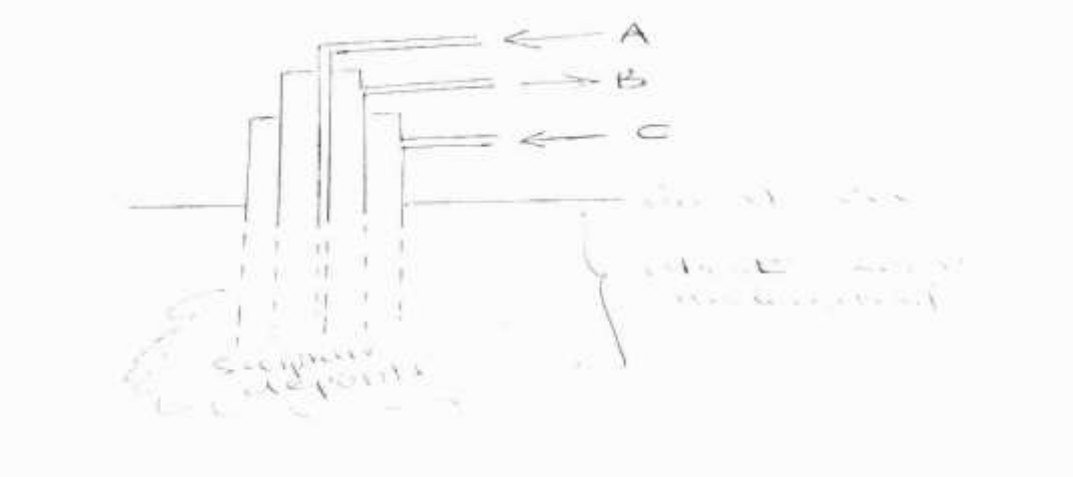
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4(a) The diagram below shows the process used to obtain Sulphur from underground deposits



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i) Name the above process used to obtain Sulphur from the underground deposits **(1mk)**

……

……

ii) Name the substance passed through pipe

A **(1mk)**

……

B **(1mk)**

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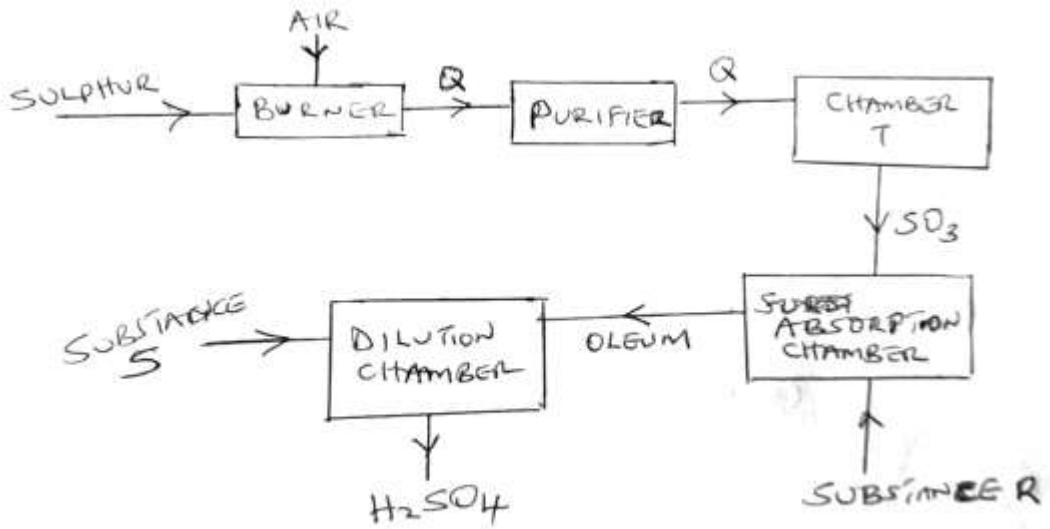
iii) State two properties of Sulphur that makes it possible to extract using the above process **(2mks)**

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……

b) The diagram below shows the contact process used in the manufacture of concentrated sulphuric(vi) acid



i)Identify the following:

a) Substance Q formed in the burner **(1mk)**

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……

b) Chamber T **(1mk)**

……

c) Substance R **(1mk)**

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d) Substance S **(1mk)**

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ii) Write the chemical equation occurring in the dilution chamber **(1mk)**

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iii) Why is it necessary to pass substance Q though a purifier **(1mk)**

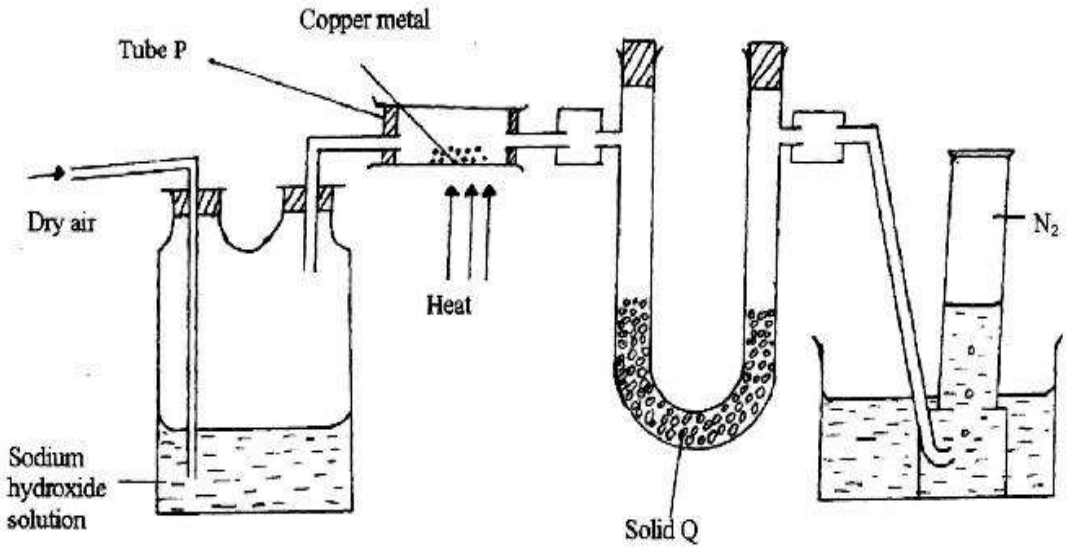
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]iv) State one use of sulphuric (VI) acid **(1mk)**

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5. (a) The diagram below represents a set-up that was used to obtain dry nitrogen from air. Study it and answer the questions that follow.



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(i) ***Name*** solid ***Q***. **(1mk)**

……

(ii) ***What is*** the purpose of sodium hydroxide? **(1mk)**

……

(iii) ***Write*** an equation for the reaction which took place in tube ***P***. **(1mk)**

……

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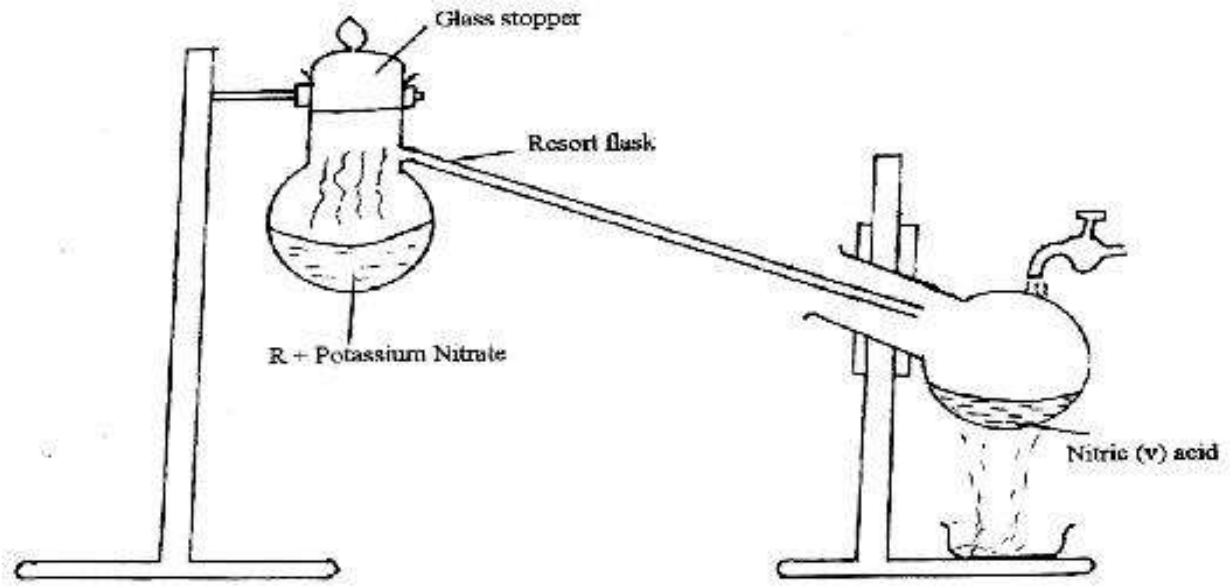
(iv) ***Give the name*** of one impurity in the nitrogen gas obtained. **(1mk)**

……

(v) ***Why is*** liquid nitrogen used for storage of semen for artificial insemination? **(1mk)**

……

(b) The set-up below was used to prepare nitric acid.



I. ***Give*** the name of liquid ***R***. **(1mk)**

……

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II. ***Write an equation*** for the reaction which took place in the retort flask. **(1mk)**

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III. ***Explain*** why: -

(a) Nitric acid is not stored in clear/transparent glass. **(2mks)**

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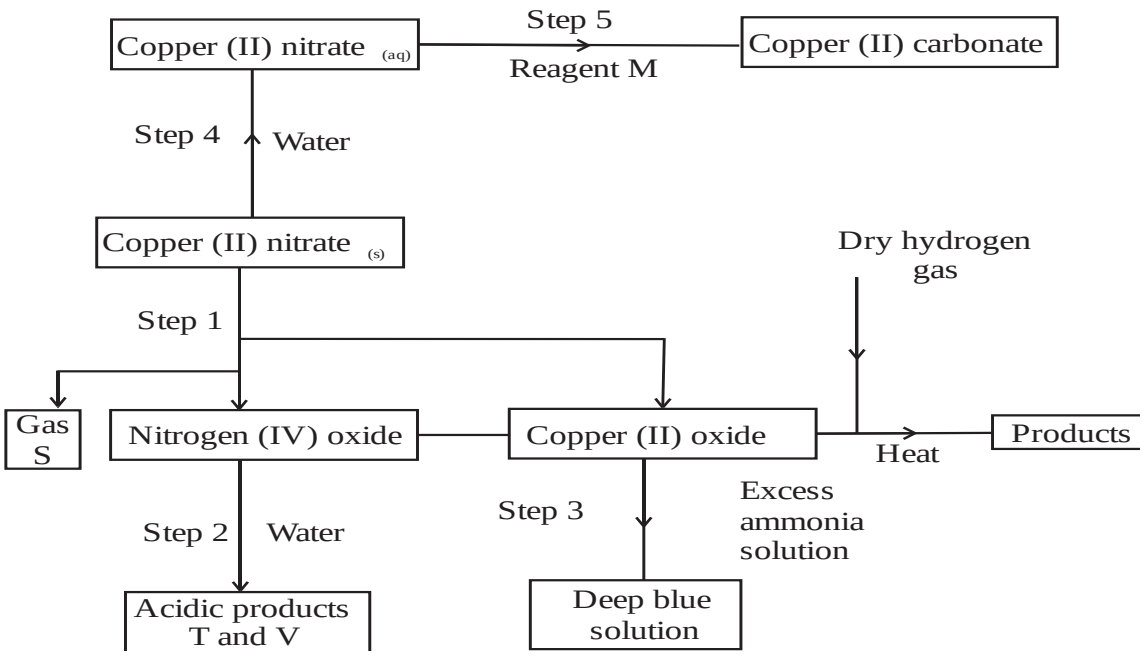
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(b) The reaction between copper metal with 50% nitric acid *(one volume of acid added to an equal volume of water)* in an open test tube produces brown fumes. **(2mks)**

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6. The flow chart below shows some reactions starting with copper (II) nitrate. Study it and answer questions that follow.



i) State the condition necessary in step 1 **(1mk)**

……

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ii) Identify: **(4mks)**

Reagent M

……..

Gas S

……..

Acidic products T

…….

V

……..

iii) Write the formula of the complex ion formed in step 3. **(1mk)**

……

……

iv) Write the equations for the reaction in **(2 mks)**

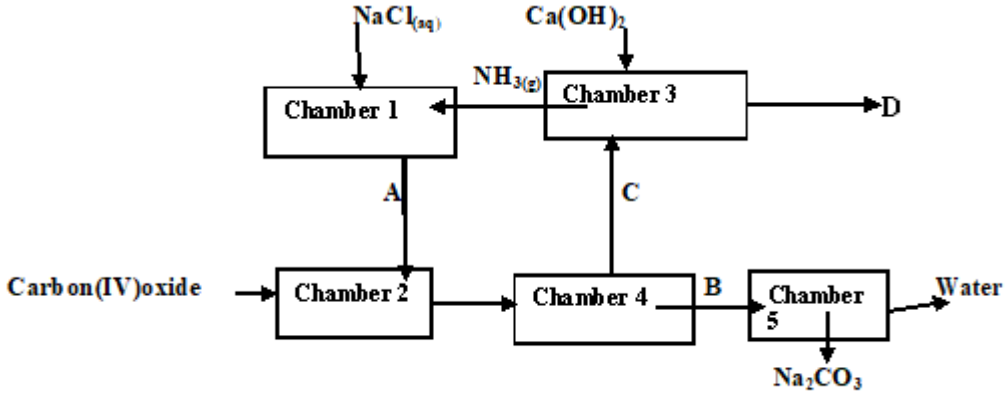
Step 1

……

Step 2

……

7. The flow chart below shows industrial manufacture of sodium carbonate. Study it and answer the questions that follow.



(a) Name substances **A**, **B**, **C** and **D**. **(4mks)**

A

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……..

B

……..

C

……

D

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(b) Write equation for the reactions taking place in chamber 2, 3 and 5. **(3mks)**

Chamber 3

……

……

Chamber 5

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……..

Chamber 2

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……

(c) Name the physical process in chamber 4 and 5. **(2mks)**

Chamber 4

……

Chamber 5

……

(d) Name **one** source of carbon (IV) oxide for Solvay process. **(1mk)**

……

……

(f) Give 2 uses of sodium carbonate **(1mk)**

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