NAME:_____ ADM.NO. _____ CLASS____

CHEMISTRYTHEORY PAPER233
MARCH – APRIL
TIME 2½ HOURS

FORM TWO CHEMISTRY

1. State two roles played by chemistry in the society. (2mks)

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2. Name two commonly abused drugs by the youths. (1mk)

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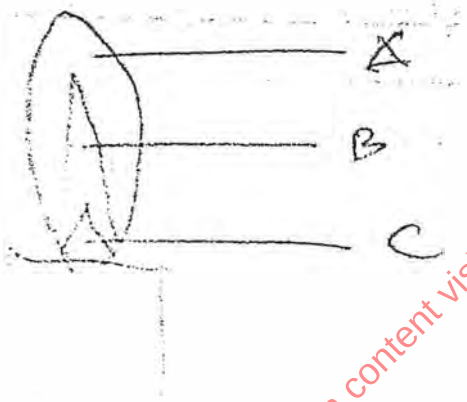
3. Use the diagram below to answer the questions that follow.



Name region labelled. (2mks)

A – _____

B – _____

4. State the two differences between luminous and Non-luminous flame. (2mks)

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_____

5. A student was given a mixture containing common salt, ammonium chloride and copper(II) oxide; and was required to name components separately. Describe the procedure that he used. (4mks)

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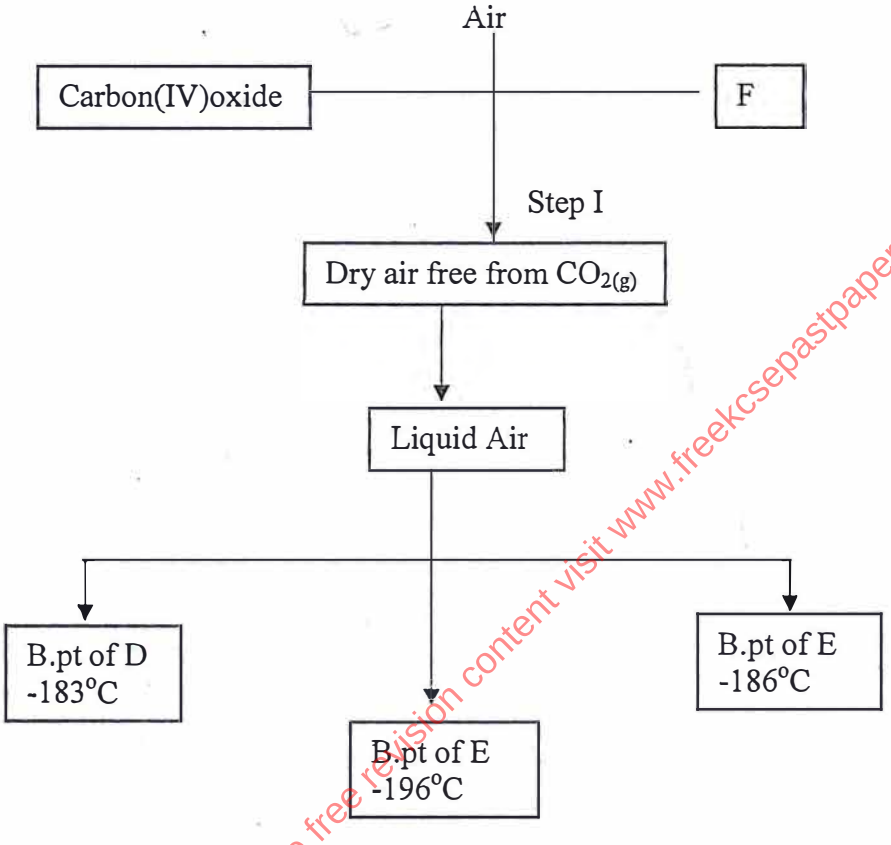
6. Cooking oil comprise of a mixture of compounds which have a boiling point of 23^{o} to $27^{o}C$.

a) What evidence is there to support the statement that cooking oil is a mixture (1mk)

b) Name an experimental technique that could be used to confirm your answer in part(a) above. (1mk)

7. The flow chart below is a summary of fractional distillation of air.



a) I) Explain how carbon(IV) oxide gas is removed in step 1. (1mk)

ii) State the form in which F is removed. (1mk)

iii) Identify products D and E. (2mks)

b) Explain how dust particles are removed in step 1. (1mk)

c) Name the property of the products that enable the separation. (1mk)

8. The table below indicate the pH value of solution labelled A B C D and E

Solution	A	B	C	D	E
pH Values	5	13	2	10	7

Identify the solutions;

i) Solution of an anti acid tablet. (1mk)

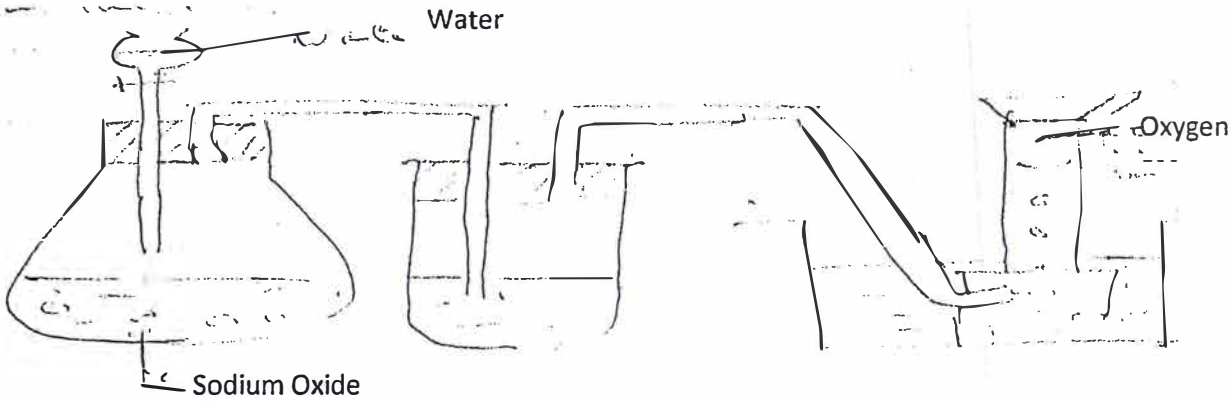
ii) Which solution is likely to be acetic acid. (1mk)

iii) Which is likely to be common salt solution. (1mk)

9. State the reason why the pH value of magnesium chloride solution is 7 while that of aluminium chloride solution is 2. (2mks)

10. Describe how you can prepare acid-base indicator starting with red petals. (3mks)

11. The apparatus in the diagram below was used by students to prepare dry oxygen gas in the laboratory.



a) Identify and correct two mistakes in the set-up. (2mks)

b) State two large scale uses of oxygen gas. (2mks)

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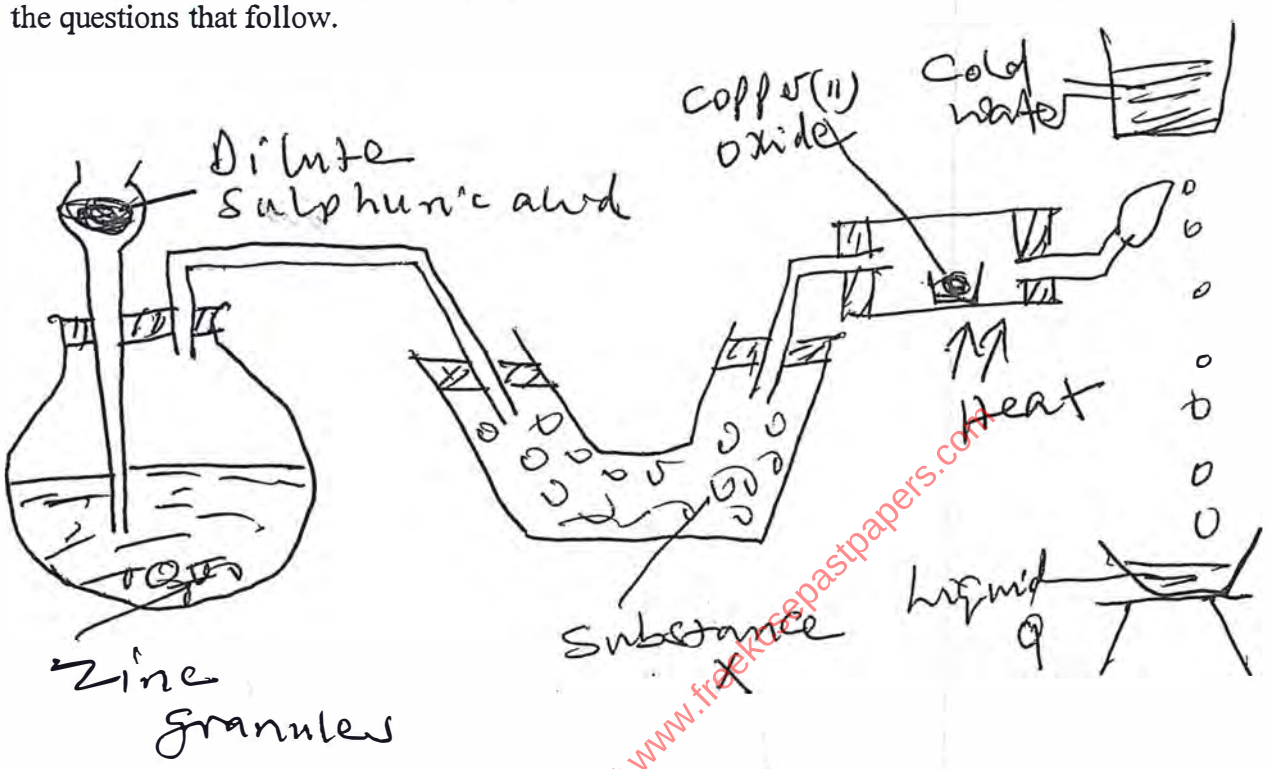
12. In an experiment to investigate the properties of hydrogen, a student set-up the apparatus to answer the questions that follow.



i) Name substances Z and Q. (2mks)

Z – _____

Q - _____

ii) State two properties of hydrogen that were being investigated. (1mk)

_____

_____

_____

iii) Give a reasons why hydrogen is no longer used to fill meteorological ballons. (1mk)

_____

_____

_____

iv) Describe one chemical test that can be carried out to identify liquid Q. (2mks)

_____

_____

_____

_____

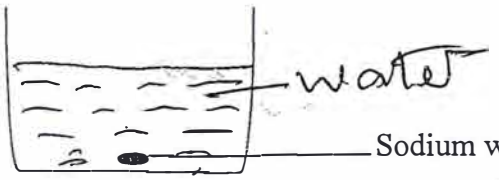
3. Complete and balance the chemical equations below. (3mks)

i) $Mg_{(s)} + O_{2(g)} \longrightarrow$

ii) $H_2O_{(g)} + Zn_{(s)} \longrightarrow$

iii) $NaOH_{(aq)} + HCL_{(aq)} \longrightarrow$

14. A piece of Sodium metal was carefully wrapped with a wire gauze and placed in water as shown below.



i) State and explain the observation made in the above experiments. (1mk)

ii) Explain why Sodium was wrapped using wire gauze. (1mk)

iii) Write an equation for the reactions that takes place when Sodium reacts with water. (1mk)

5. Atom K exists as $^{14}_{6}K$ and $^{12}_{6}K$.

a) What name is given to the two types of atoms. (1mk)

b) Using dots (.) and crosses(x) diagram illustrate the atomic structure of $^{14}_{6}K$. (1mk)

a) The relative atomic mass of an element is 63.5.The element has isotopes of mass 63 and 65 respectively. Calculate the percentage (%) abundance of each isotope. (3mks)

c) Write a balanced chemical equation for the decomposition of hydrogen peroxide in presence of a catalyst manganese(IV) oxide. (1mk)

d) State two uses of calcium metal. (2mks)

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17.a) The information below relates to elements N,P, Q, R and S. study it and use it to answer the questions that follow. The letters do not represent the actual symbols of the elements.

Element	Atomic radius (nm)	Ionic radius (nm)	Formula of oxide	M.pt of the oxide
N	0.364	0.421	N_2O	-119
P	0.830	0.711	PO_2	837
Q	0.592	0.485	Q_2O_3	1466
R	0.381	0.446	R_2O_5	242
S	0.762	0.676	SO	1054

i) Name the elements that are metals. (2mks)

_____

ii) Name the pair of elements that would react most vigorously with each other. (2mks)

_____

18. The grid below shows the part of the periodic table of elements. Letters don't represent the actual symbols.

R								H
P	Q							
L	N		Y	K	Z		I	W
M	O							

A0 Give the chemical family name represented by; (2mks)

i) P _____

ii) Q _____

iii) E _____

iv) H _____

b) Write down the chemical formula of the following:

i) Chloride of Y. (1mk)

_____

ii) Phosphate of M. (1mk)

_____

c) Compare the atomic radius of the following and give a reason for your answer.

i) P and L (2mks)

_____

_____

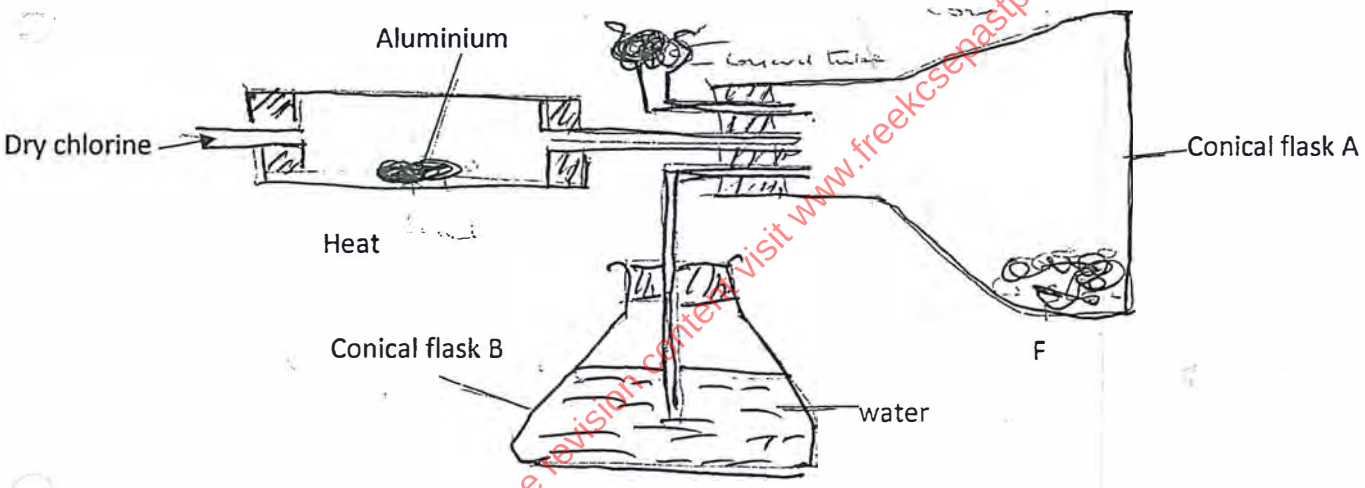
ii) L and Y (2mks)

19. Draw a well labelled diagram to show bonding in the following compounds.

i) Hydrozonium ion (H_3O^+) (2mks)

ii) Carbon(iv)oxide (CO_2) (2mks)

20. Dry chlorine gas was passed through a combustion tube as shown below.



a) Write a chemical equation for the reaction taking place in;

i) Combustion tube. (1mk)

ii) Conical flask B. (1mk)

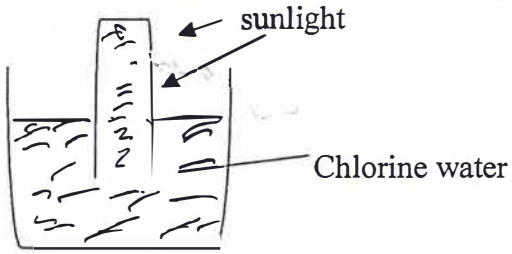
b) State the role played by;

i) Calcium oxide in guard tube. (2mks)

ii) Water in conical flask B. (1mk

iii) State the main purpose of heating in the combustion tube. (1mk

21. The set-up below was left in light for two days.



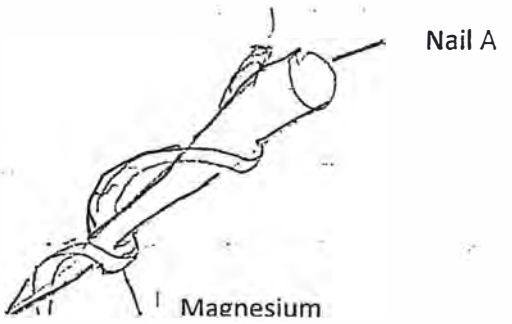
i) Draw the set-up after 2 days to show that happened. (2mk

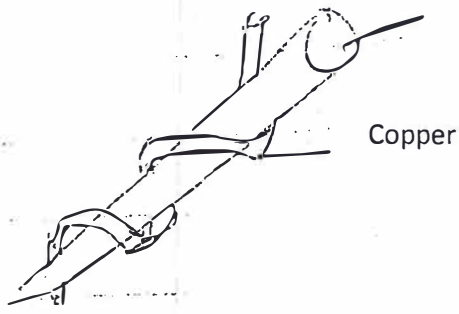
ii) State the observation and explain what happens to a blue litmus paper when put in t solution after 2 days. (2mks)

iii) Mention two uses of chlorine. (2ml

22.a) What is rust? (1ml

b) Two new iron nails were wrapped with strips of magnesium ribbon and copper foil as below and left outside for two weeks.





3. Is air a mixture or a compound? Explain. (2mks)

4.i) Distinguish between a conductor and non-conductor. (1mk)

Name a non-metal that is a conductor. (1mk)