

NAME..... ADM NO.....
SCHOOL..... CANDIDATE'S SIGN.....
DATE

233
CHEMISTRY
FORM 1
TIME: 2 HOURS

END OF TERM (III) EXAMINATION -2019
Kenya Certificate of Secondary Education (K.C.S.E)

233
CHEMISTRY
FORM 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Write your Name, Admission number and Name of your school in the spaces provided
- Answer ALL questions in the spaces provided in the question paper
- Write legibly neatly.

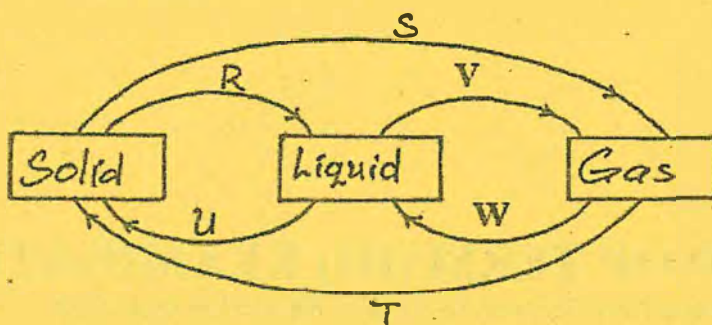
FOR EXAMINER'S USE ONLY.

QUESTION	MARKS	CANDIDATES SCORE
A	50	
B	50	
TOTAL	100	

*This paper consists of 12 printed pages .
candidates should check the question to ensure that all pages are printed
as indicated and no questions are missing.*

SECTION A(50MARKS)

1. The diagram below shows the physical. State of matter. Study it and answer the questions that follow.



a) Identify the process R, V, W and U. (2mrks)

R _____ V _____

U _____ W _____

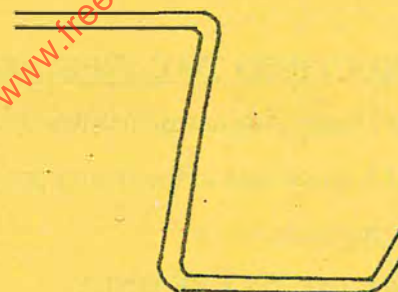
b) Name one element which can undergo the process represented by S and T. (1mk)

2. Name the following pieces of apparatus and give their specific uses. (2mrks)

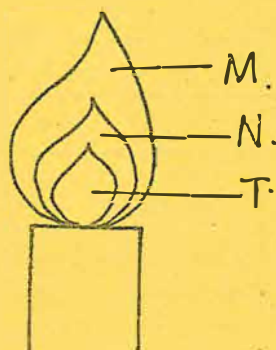
(i)



(ii)



3. The diagram below shows a Bunsen burner flame commonly used in a laboratory.



a) Name the part labelled N. (½mk)

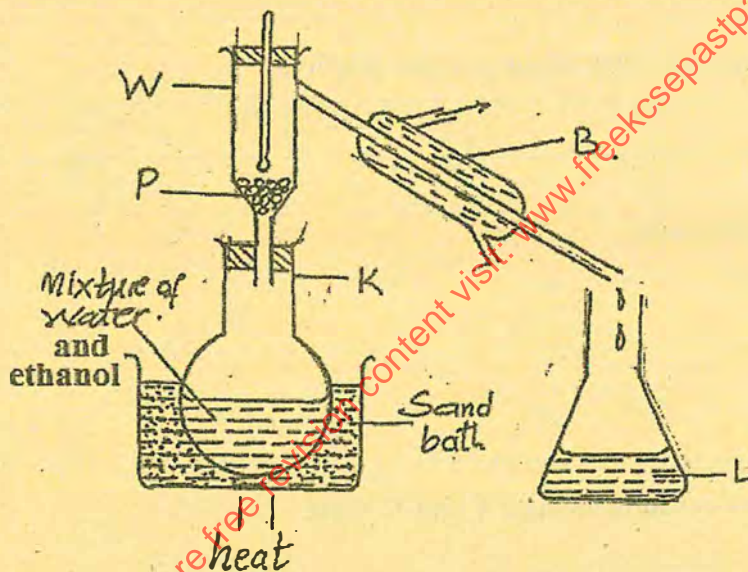
b) Which part of the flame is hottest? (½mk)

c) Give two reasons why luminous flame is not preferred for heating purposes in the laboratory. (1mk)

4. a) What is meant by drug abuse? (1mk)

b) Mention two social economical effects of drug abuse in the society. (2mks)

5. The set-up below represents the apparatus that can be used to separate a mixture of two miscible liquids C and D. Whose boiling points are 80°C and 110°C respectively.



a) Name the parts labelled W and B (½ mk)

W _____ ½

B _____ ½

b) What is the function of the substance labelled P. (1mk)

c) mention two industrial uses of this process. (1mk)

6. a) What is an element? (1mk)

b) Complete the table below of the elements and their symbols. (2mrks)

Element	Symbol
	Na
Silver	
	Be
	Ne

7. a) Define a conductor (1mk)

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

8. a) Give two examples of alkali. (1mk)

b) The table below shows the PH values of some solutions

solution	T	U	V	W	X	Y
pH	4	5	2	7	10	14

Which solution is likely to be ;

i) Eno (anti-acid tablet) (1mk)

ii) lemon juice (1mk)

iii) A solution of a product formed when V and X react. (1mk)

9. The pH values of the soil sample was found to be 5.5 An Agricultural officer recommended addition of lime. i.e hydrated calcium oxide. (2mrks)

10. Complete the word equation below.

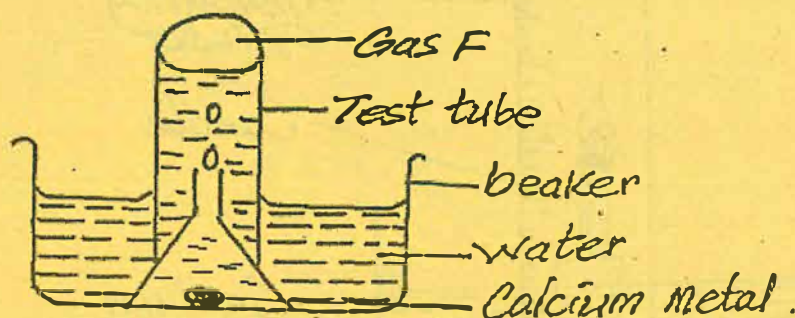
i) Zinc + sulphur(vi) acid (1mk)

ii) Sodium hydroxide + hydrochloric acid (1mk)

iii) Potassium hydrogen carbonate + hydrochloric acid

(1mk)

11. The set-up below was used to collect gas F, produced by the reaction between water and calcium metal.



i) Name gas F

(1mks)

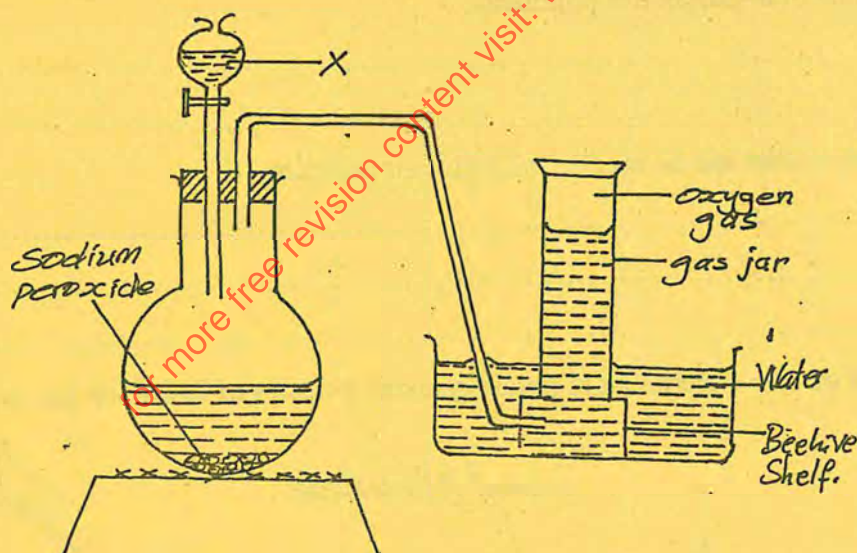
ii) Write a word equation for the reaction that occurred.

(1mk)

iii) Give one laboratory use of the solution formed in a beaker

(1mk)

12. The diagram below is set up of the laboratory preparation of oxygen gas.



a) Name liquid x

($\frac{1}{2}$ mks)

b) Explain why it is important not to collect any gas for the first few seconds of the experiment.

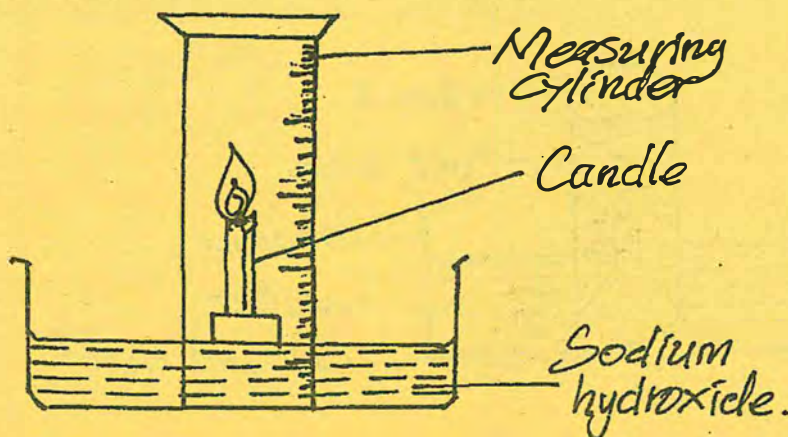
(1mk)

c) Give one use of oxygen gas.

($\frac{1}{2}$ mk)

d) What property of oxygen makes it possible for its collection as indicated by the diagram. (1mk)

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



a) After some time, the candle goes off. Explain. (1mk)

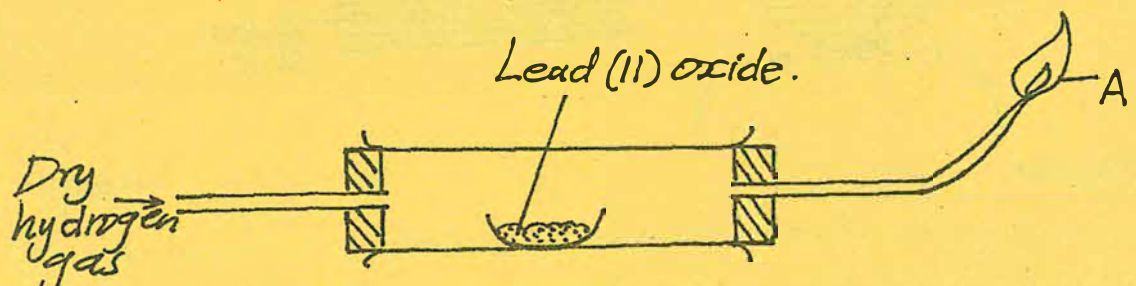
b) What was the purpose of the experiment? (1mk)

14. a) What is pollution? (1mk)

b) Name two kinds of atmospheric pollutants. (1mk)

c) Mention two ways that can be used to minimize air pollution. (2marks)

15. A student carried out the experiment to investigate one property of hydrogen gas as shown below.



a) Which condition is absent in the above set-up? (1mk)

b) What property of hydrogen is being investigated? (1mk)

c) Write word equations for reactions occurring inside the combustion tube and at point A after the missing conditions is inserted. (2mrks)

16. Complete the table below to show the acidic and basic solutions. (2mrks)

Indicator	Colour in acidic solution	Basic solution
Litmus solution		blue
Phenophalein	colourless	

17. i) Explain why hydrogen gas is not used in meteorological departure to give the weather information. (1mk)

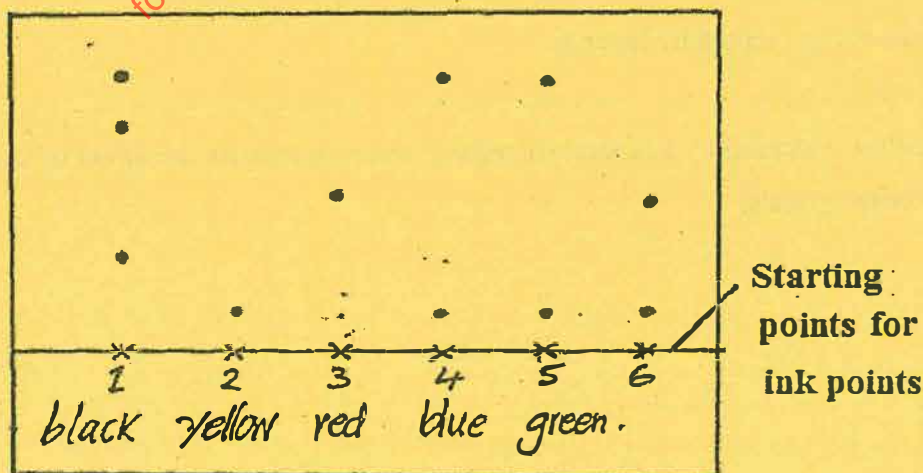
ii) Which other gas is used instead of hydrogen. (1mk)

18. a) Metal S removes oxygen from an oxide of P. Q reacts with an oxide R but not with an oxide of P reacts vigorously with cold waters. Arrange the metals in order of reactivity stating with the most reactive. (2mrks)

b) State and explain the change in mass when sulphur is burnt in an open crucible. (1mk)

SECTION B

19. a) A piece of chromatography paper was spotted with coloured inks obtained from pens labelling 1 to 6. The diagram below shows the spots after the chromatogram was developed.



i) Which two pens contained the same pigment? (1mk)

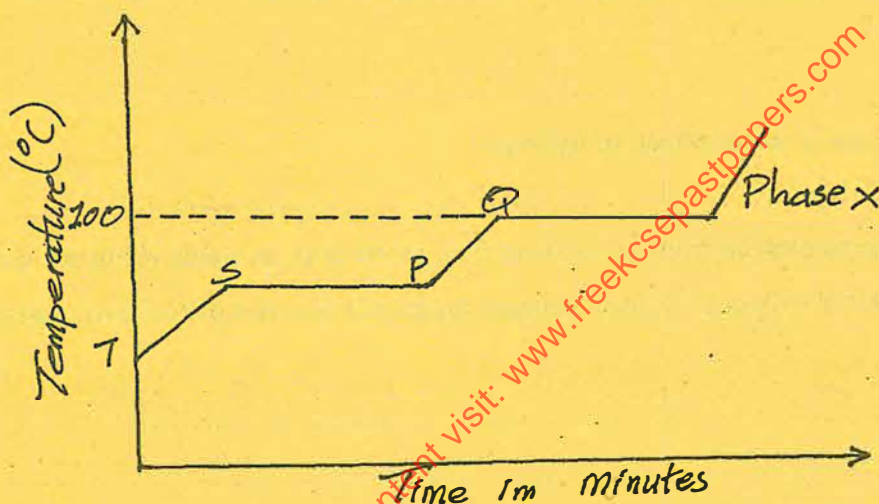
ii) Which pens contained only one pigment? (1mk)

iii) According to the chromatogram which pigments are present in the ink of pen number 6? (1mk)

iv) On the diagram, show the solvent front? (1mk)

v) State two applications for the above process in daily life. (1mk)

b) The graph below was obtained by students of form 1D during an experiment. Use it to answer the questions that follow.

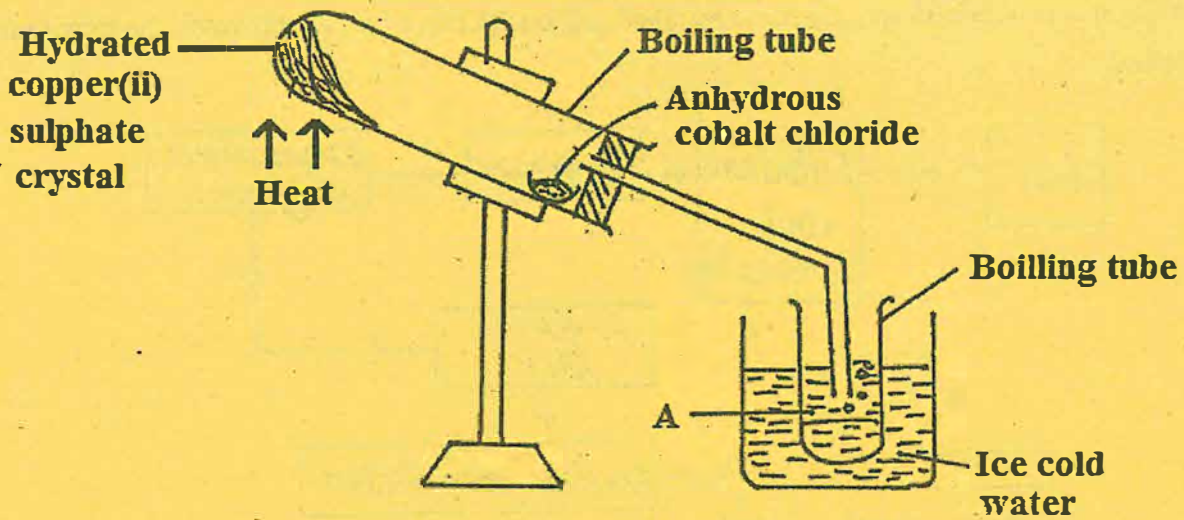


i) Give a reason why there is no temperature change during section S-P (1mk)

ii) On the same axis sketch a graph that would be obtained if some salt were added to the ice before heating (1mk)

iii) Name the phase represented by letter x. (1mk)

c) The set-up below was used by a laboratory technician to investigate the effect of heat on copper(II) sulphate crystals.



i) What observations are made inside the combustion tube. Explain. (2mrks)

.....

ii) Name liquid A and state how its identity is confirmed in the set up. (1mk)

iii) What kind of change is illustrated by the above process. (1mk)

.....

iv) Why is the boiling tube slanted? (1mk)

.....

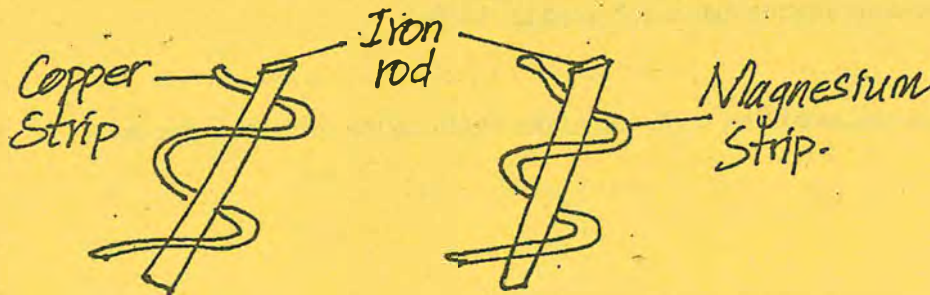
20. a)(i) What is rust? (1mk)

.....

(ii) Give two advantages of rust. (2mrks)

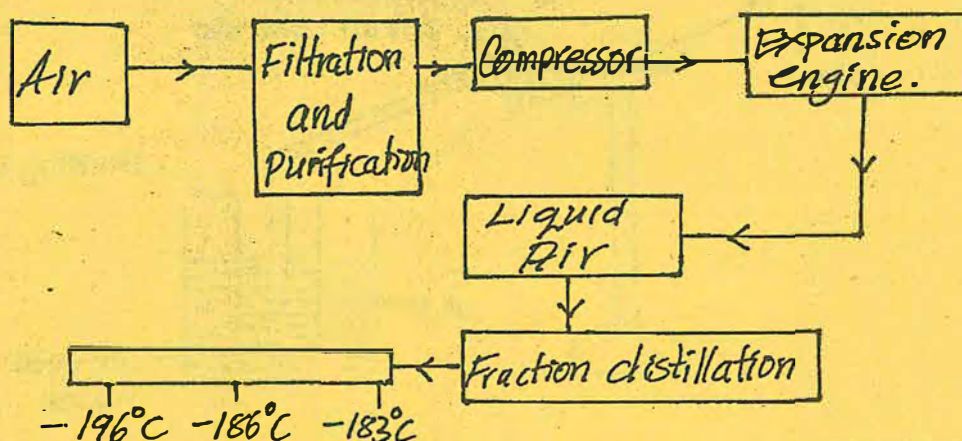
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(iii) Two iron rods were wrapped with copper and magnesium strips as shown below. What observations were made on each rod after exposure in open air for six months. Explain. (3mks)



.....

b) Oxygen is obtained on large scale by fractional distillation of air as shown on the flow chart below.



i) Identify the substance that is removed during filtration and purification. (1mk)

.....

.....

ii) Explain why carbon (iv) oxide and water are removed before liquefaction of air. (1mk)

.....

.....

iii) In fractional distillation of liquid air what is the role of;

I Sodium hydroxide solutions. (1mk)

.....

.....

II cooling dust free air to -25°C (1mk)

.....

.....

III Compressing gases to a pressure of 200atm and temperature of -200°C (2mks)

.....

.....

iv) Identify the components that is collected at -186°C (1mk)

.....

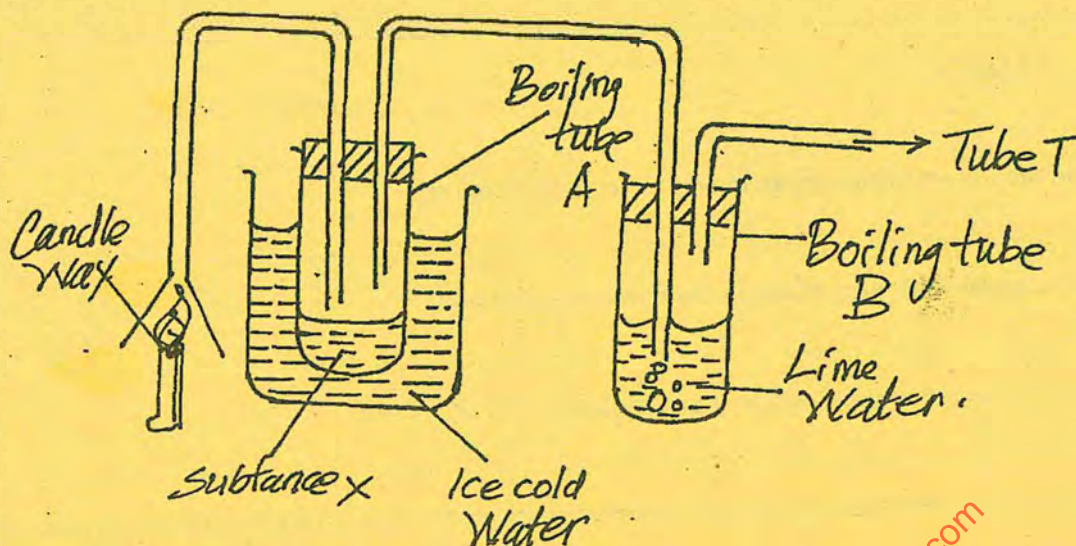
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v) Which gas is collected first at the top of the fractionating column. Explain (1mk)

.....

.....

21. The set up below was used to investigate the products of burning candle wax. Study it and answer the questions that follow.



a)i) Name substance x (1mk)

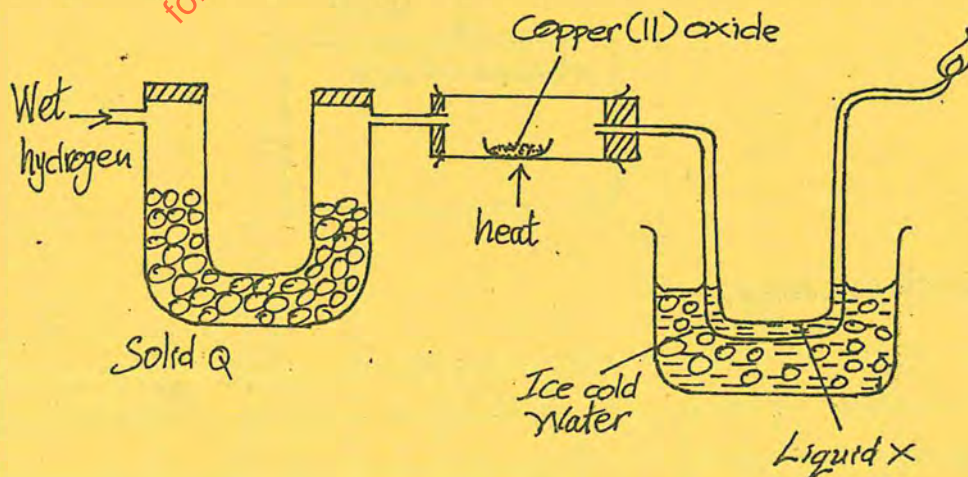
ii) Write the word equation for the reaction that will enable substance x be formed. (1mk)

iii) State and explain the observation made in boiling tube B after some time. (2mks)

iv) What is the role of ice cold water. (1mk)

v) Name any two gases that escape through tube T (1mk)

b) Hydrogen gas was dried and passed over heated copper (ii) oxide as illustrated below.



Name

I Solid Q (1mk)

II Liquid X (1mk)

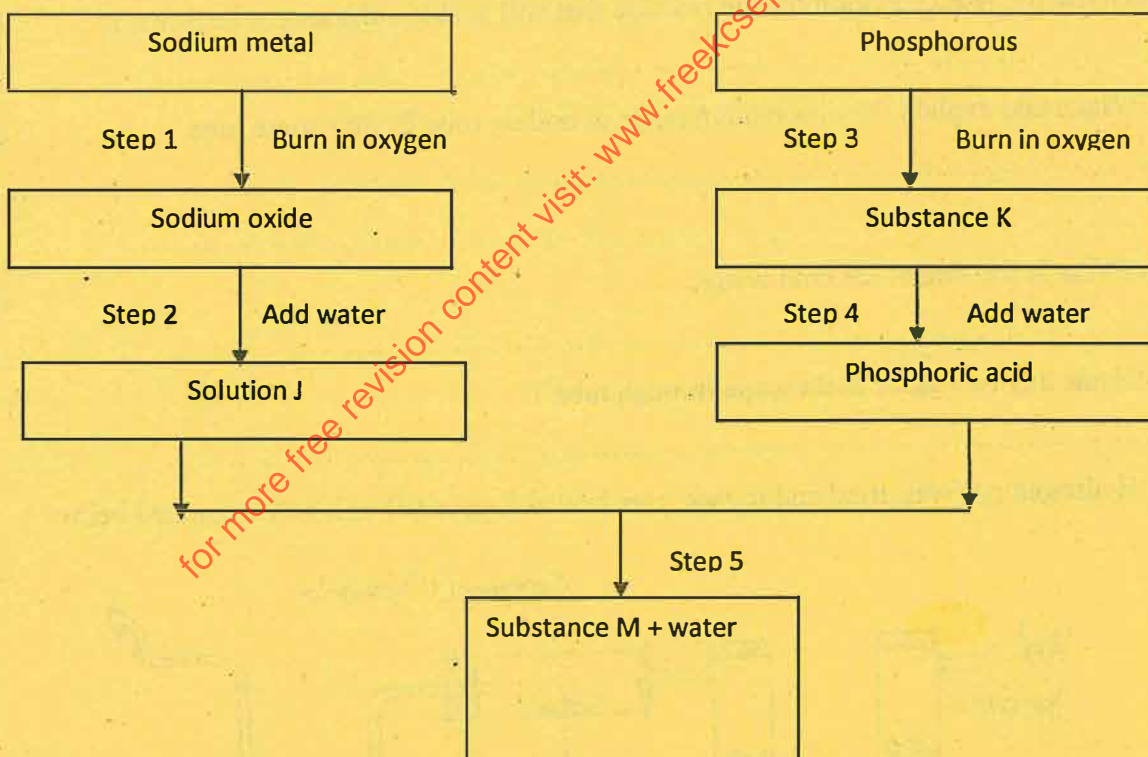
ii) State the observations made inside the combustion tube. (1mk)

iii) Write equation taking place in the combustion tube. (1mk)

iv) Describe one chemical test to confirm identity of liquid x (2mks)

v) Why is it not advisable to use sodium metal with dilute hydrochloric acid in preparation of hydrogen. (1mk)

22. Study the flow chart below and answer the equations that follow.



i) Identify the following substances

J

K

M

ii) Write a word equation for the following steps

step I (1mk)

Step 4 (1mk)

iii) What name is given to the type of reaction in step 5. (5mk)

b) Some metal oxides are given below zinc oxide, potassium oxide, carbon (iv) oxide, magnesium oxide, carbon (ii) oxide.

From the above list choose one oxide that is;

I Neutral (1mk)

II Basic (1mk)

III Amphoteric (1mk)

IV Acidic (1mk)

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