CHEMISTRY
FORM 1EXAM
END OF TERM II EXAM
TIME: 2HOURS

Name: ..... Adm no: .....
School: ..... Candidate's Signature.....
Date: .....

- *Answer **all** the questions in the spaces provided.*
- *Write your **name** and **index number** in the spaces provided above.*
- *Mathematical tables and electronic calculators may be used for calculations.*
- *All workings **must** be clearly shown where necessary*

For Examiner's Use only:

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 16	80	

1. Define the following terms

a) Drug (2mrks)

Any substance, natural or manufactured, which when taken alters the normal functioning of the body

b) Prescription (2mrks)

Written instruction by a qualified medical officer, indicating the type of drug and how the drug should be taken.

c) Drug abuse (1mk)

Use of a drug for a purpose it was not meant for.

2. Nekesa visited a hospital and was given a syrup whose prescription was 2×3. How should she take the syrup? (2mrks)

Nekesa should take two teaspoons of the syrup three times a day ie morning, lunch hour and evening.

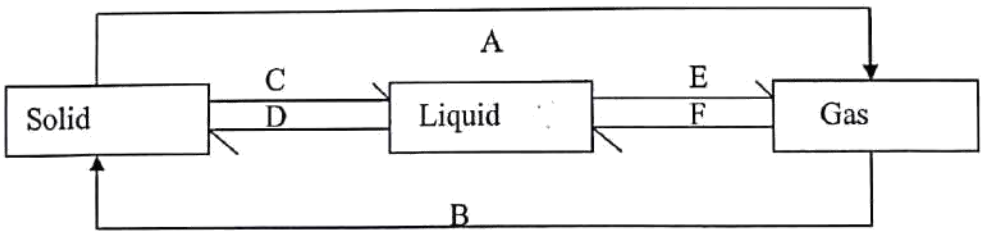
3. (a) Why are most of the apparatus in chemistry laboratories made of glass? (2mrks)

- Easy visibility.
- Easy to clean
- do not react with most chemicals used in the lab.

(b) Name two apparatus used for accurate measurement of volume. (2mrks)

- volumetric flask
- burette
- Pipette
- Syringe.

4. The flow-chart below shows the physical changes of matter. Study it and answer the questions that follow.



Name the processes. (6mks)

A Sublimation.

D Freezing.

E Evaporation.

F condensation

B Deposition.

C melting.

5. Differentiate between physical and chemical changes. (2mks)

Physical change	Chemical change
• no new substance formed.	• New substance formed.
• Easily reversible.	• not reversible
• no change in mass	• accompanied by change in mass
• not accompanied by net heat change.	• Accompanied by heat change.

6. State three differences between a luminous and non-luminous flame. (3mrks)

Luminous	non luminous.
Has 4 regions / zones	Has 3 regions.
sooty.	non sooty
Wavy	still
Bright	dull
Produced when air hole is closed.	produced when air hole is open

7. Define the following terms (4mrks)

a) An atom

Smallest particle of an element which can take part in a chemical change.

b) A molecule

Smallest particle of an element or compound which can exist separately.

c) An element

Pure substances which cannot be split into simpler substances by chemical means.

d) A compound

Pure substance made up of two or more elements chemically combined.

8. Complete the following table (4mrks)

Element	Symbol
potassium	K
Sodium	Na
Silver	Ag
Gold	Au
Iron	Fe
lead	Pb
Copper	Cu
Mercury	Hg

9. Name the elements present in the following compounds.

a) Sodium Bromide (2marks)

Sodium and bromine

b) Magnesium nitride (2marks)

magnesium and nitrogen.

c) magnesium carbonate (3mrks)

magnesium, carbon and oxygen.

10. Write a word equation for the reaction between:

a) Carbon and oxygen (2mrks)

Carbon + ~~Ge~~ Oxygen ⟶ Carbon (IV) ~~oxyd~~ oxide.

b) sulphur and flourine (2mrks)

Sulphur + flourine ⟶ Sulphur flouride.

(c) Zinc and bromine (2mrks)

zinc + bromine ⟶ zinc bromide.

v) potassium and chlorine (2mrks)

Potassium + Chlorine ⟶ Potassium chloride.

11. (a) Complete the table below. (3mrks)

Indicator name	Colour in		
	Acid	Base	Neutral
Litmus	Red	Blue	Purple.
Phenolphthalein	Colourless	Pink.	colorless
Methyl orange	Pink	Yellow	Orange.

(b) Five solutions were tested with universal indicator and their PH values recorded.

Solution	pH value
A	11
B	2
C	6
D	7
E	13

i) Which solution is a strong acid? (1mrk)

B

ii) Which solution is a weak acid? (1mrk)

C

iii) Which solution is neutral? (1mrk)

D

iv) Which solution is a strong base? (1mrk)

E

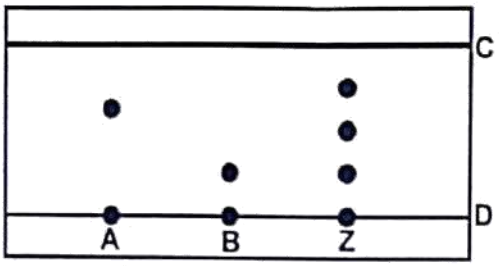
v) Which solution is a weak base? (1mrk)

A

12. When a student was stung by a stinging nettle plant, a teacher applied an aqueous solution of ammonia to the affected area of the skin and the student was relieved of pain. Explain.(2mks)

The product from stinging nettle plant is acidic hence aqueous ammonia solution bring basic neutralizes the acid product.

13. Spots of three pure pigments A, B and mixture Z were placed on a filter paper and allowed to dry. The paper was then dipped in a solvent. The results obtained were as on the paper chromatogram.



i) Identify;

a) Baseline. (1 mark)

D

b) Solvent front. (1 mark)

C

ii) Which pure pigment was component of Z.? (1 mark)

B

14. Classify the following as either physical or chemical changes. (5mks)

a) Freezing of water.

Physical

(b)Rusting of iron

Chemical

(c)Heating of glass until it melts

Physical

(d)Burning a candle.

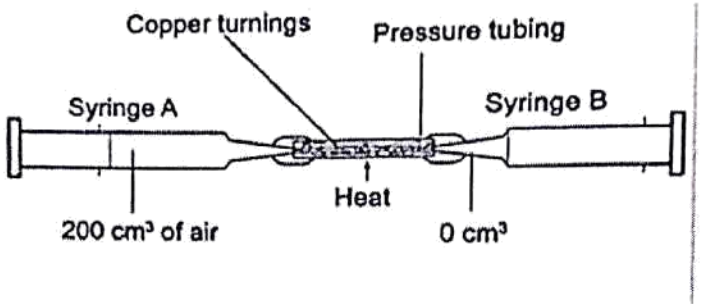
Physical

(e)Heating copper (II) nitrate

Chemical

15. The apparatus below were used to determine the volume of oxygen in air. About 200cm^3 of air was passed repeatedly from syringe **A** to syringe **B** over heated copper turnings as shown in the diagram. After sometime, the volume of air in the syringe **A** was 160cm^3 and syringe **B**

$0cm^3$.



a. Write a chemical equation for the reaction that took place in the combustion tube. (1mk)

$2Cu(s) + O_2(g) \longrightarrow 2CuO(s)$

b. Calculate the percentage of oxygen in the initial sample of air. (3mks)

Volume of oxygen used $= (200 - 160) = 40\ cm^3$

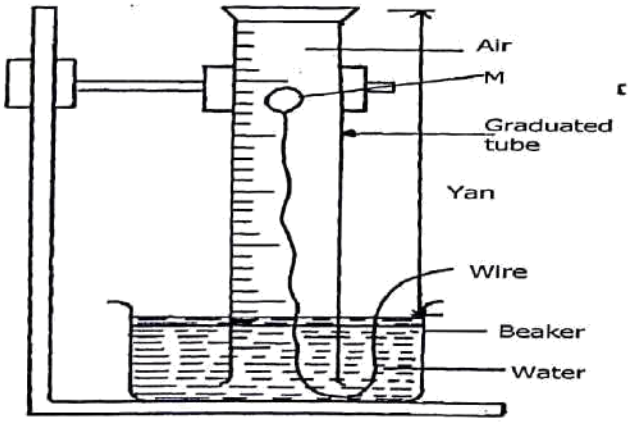
Percentage $= \frac{40}{200} \times 100 = 20\%$

c. State two possible sources of errors in the experiment. (2mks)

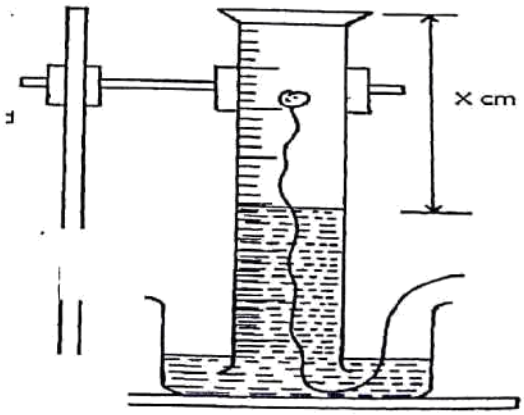
i) Not all oxygen reacted with copper

16.A form one class carried out an experiment to determine the active part of air. The diagram below shows the set-up of the experiment and also the observation made.

(i) At the beginning experiment



(ii) observation at the end of the



(i) Identify substance **M** **(1mrk)**

Phosphorus

(ii) State **two** reasons for the suitability of substance **M** for this experiment (2mrks)

- Do not react with water when being inserted into the tube
- reacts with oxygen when exposed to air

(b) Write the equation for the reaction of substance **M** and the active part of air (1mrk)

$4P_{(s)} + 3O_{2(g)} \longrightarrow 2P_2O_{3(s)}$

~~$4P_{(s)}$~~ + .

(c) (i) Using the letters **Y** and **X** write an expression for the percentage of the active part of air(2mrks)

$\frac{Y - X}{Y} \times 100$

(ii) The expression in **(c)(i)** above gives lower value than the expected. Explain (2mrks)

Wrong reading of volume

Phosphorus can go off before complete Combustion

(d) (i) Explain the observation made when litmus paper is dipped into the beaker at the end of the experiment (2mrks)

Red litmus ~~turns~~ has no effect.

Blue litmus turns red : because of formation of Phosphorous acid which is acidic

(ii) Name the active part of air (1mrk)

Oxygen.