Name: ……

Adm. No.: …… Class ……

CHEMISTRY
2024
TIME: 2 HOURS

GIDEONS ELITE BOYS CENTRE OF EXCELLENCE
DECEMBER SELF-ASSESSMENT EXAMINATIONS
FORM ONE

Kenya Certificate of Secondary Education (K.C.S.E.)

FORM 1- TERM 3

INSTRUCTIONS:

- *Write your **name** and **other details** on the space provided above*
- *Answer **all** the questions in the spaces provided for each question.*
- *All working **must** be clearly shown where necessary.*
- *Mathematical tables and silent non-programmable electronic calculators may be used.*

For Examiners Use Only

Questions	Total marks	Student's score
1 - 18	**80**	

This paper consists of 10 printed pages. Students should check to ascertain that all pages are printed as indicated and that no questions are missing.

1. Define the following terms.

a) Drug (1mrk)

……

……

b) Prescription (1mrk)

……

……

c) Drug abuse (1mk)

……

……

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

……

……

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

……

……

……

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

……

……

4. Define the following terms (4mrks)

a) An atom

……

……

b) A molecule

……

……

c) A compound

……

……

d) Element

……

……

5. Complete the following table (4mrks)

Element	**Symbol**
Silver	
	Au
Iron	
	Pb

6. Name the elements present in magnesium carbonate (3mrks)

……

…..…….

7. Write a word equation for the reaction between:

a) Carbon and oxygen (1mrk)

……

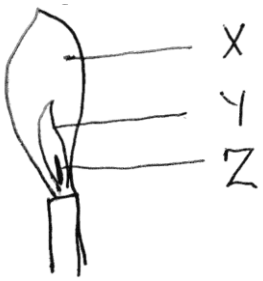
b) Iron and Sulphur (1mrk)

……

(c) Zinc and bromine (1mrk)

……

8. The diagram below shows part of non - luminous flame of the Bunsen burner. Study it to answer questions that follow.



a) Name the parts of the flame labeled as; (3mks)

X……

Y……

Z……

b) Which part of the flame above is the hottest? Explain. (2mks)

……

……

c) A non–luminous flame is preferred for heating. Explain. (1mk)

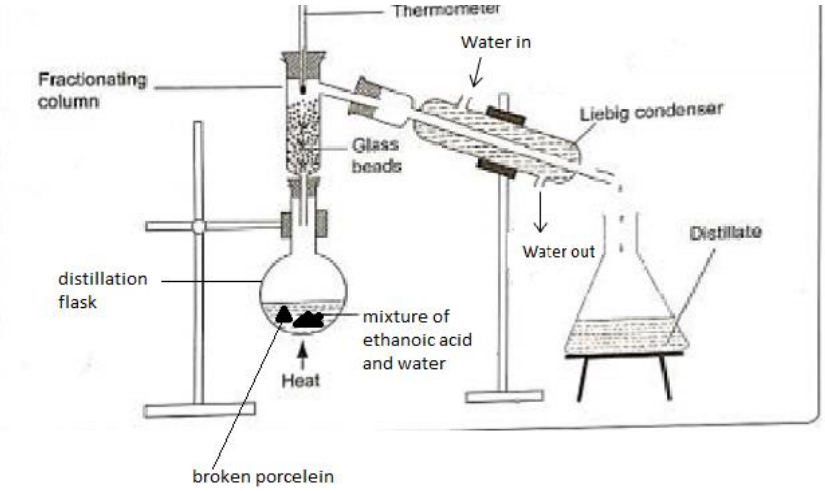
……

……

d) Name the other type of flame and the condition under which that flame is produced. (1mk)

……

9. The diagram below shows a set up that was used by a student to separate a mixture of water and ethanoic acid. Study it and answer the questions that follow. (Boiling point of water = 100^{O}C, ethanoic acid = 118^{O}C)



a. State one mistake in the set up. (1mk)

……

b. Which component of the mixture will be collected first and why? (2mks)

……

……

……

c. What are the roles of the following; (4mks)

i. Thermometer

……

……

ii. Liebig condenser

……

……

iii. Fractionating column

……

……

iv. Glass beads

……

……

d. Why is it preferable for the distillation flask to be round- bottomed rather than flat bottomed rather than flat bottomed? (1mk)

……

……

e. Name the method of separation of the mixture.
(1mark)

……

f. Name two mixtures that can be separated using the above method of separation
(1mark)

……

……

g. At what point does one know that the entire first fraction has been removed from the distillation flask. Explain. (2marks)

……

……

……

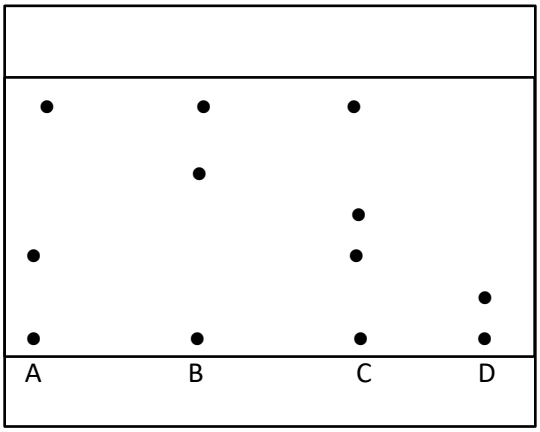
10. State two laboratory rules to observe when preparing a **poisonous** gas. (2mks)

……

……

……

11. The spots in the diagram below represent results for three brands of soda that contains unwanted food additives.



The results showed presence of unwanted food additives in B and C only. On the diagram:

i) Label the baseline or origin and the solvent front. (2mks)

ii) Circle the spots which showed unwanted food additives. (2mks)

iii) Which food additive was pure? Explain. (2mks)

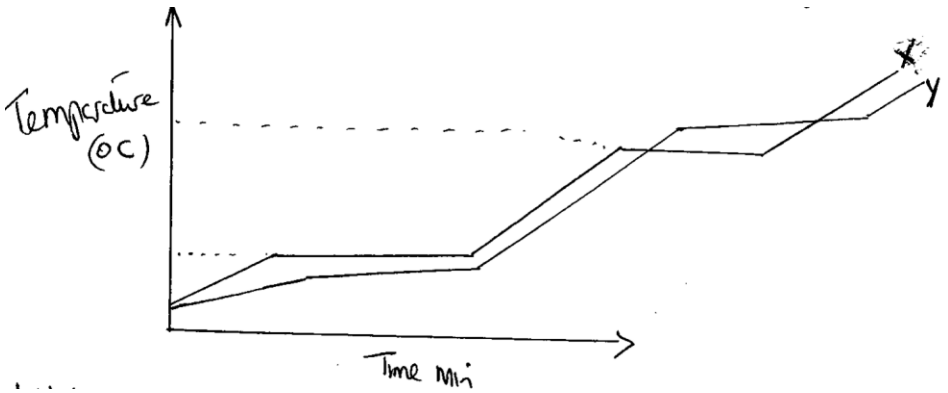
……

……

iv) Name the method of separation above (1mark)

……

12. The graph below shows the heating curves obtained when solid X and solid Y were heated to boiling point.



i) Which of the two liquids was pure? Explain. (2mks)

……

……

ii) What would be the effect of adding an impurity to the boiling point of a substance? (1mk)

……

13. Complete the table below. (3mrks)

Indicator name	Colour in		
	Acid	Base	Neutral
Litmus	Red		
Phenolphthalein			colourless
Methyl orange	Pink		

14. a) Five solutions were tested with universal indicator and their PH values recorded.

Solution	pH value
A	11
B	2
C	6
D	7
E	9

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

……

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

……

iii) Which solution is neutral? (1mrk)

……

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

……

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

……

b) Name the acids found in each of the following substances (5marks)

i) Lemon juice ……

ii) Sour milk ……..

iii) Oxalis ……..

iv) Bee sting ……

v) Vinegar ……

15. 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 why the student was relieved off the pain and state the importance of the aqueous solution of Ammonia in the affected area of the skin. (2 mks)

……

……

……

16. Classify the following as either physical or chemical changes. (4mks)

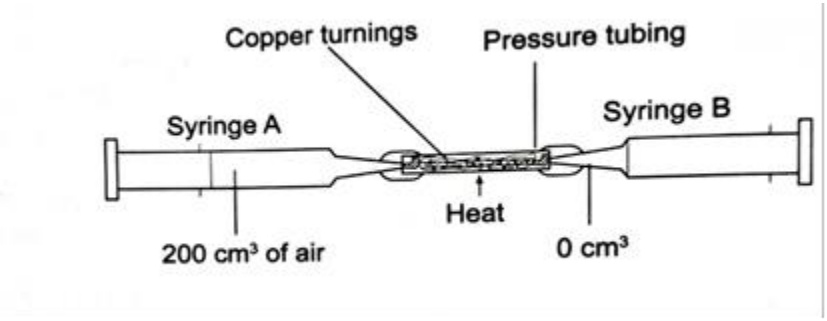
a) Freezing of water. ……..

(b)Rusting of iron ……..

(c) Burning a candle. ……..

(d)Heating copper (II) nitrate ……

17. 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 168cm^3 and syringe **B** 0cm^3.



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

……..

b. Calculate the percentage of oxygen in the initial sample of air. (2mks)

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

……

……

18. State the best method to separate the following mixtures (3mks)

(a) Components of crude oil ……..

(b) benzoic acid and sodium chloride ……

(c) Iron filings and Sulphur ……..

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