

Student's Assessment Number .....



THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

MBOZI DISTRICT COUNCIL

FORM MOCK ASSESSMENT



032

CHEMISTRY

TIME: 2:30 Hours

YEAR. 2023

Instructions

1. This paper consists of sections A, B and C with a total of **ten (10)** questions.
2. Answer **all** questions in the space provided.
3. Section A and C carries **fifteen (15)** marks while section B carries **seventy (70)** marks.
4. All writing must be in blue or black ink **except** drawings which must be in pencil
5. All communication devices and any unauthorized materials are **not** allowed in the assessment room
6. Write your **Assessment Number** at the top right corner of every page.
7. The following masses may be used

H = 1, C = 12, O = 16, Cl = 35.5, Na = 23

FOR ASSESSOR'S USE ONLY		
QUESTION NUMBER	SCORES	ASSESSOR'S INITIALS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
<b>TOTAL</b>		
<b>CHECKER'S INITIALS</b>		

**SECTION A (15 MARKS)**

Answer **all** questions in this section

1. From item (i) – (x), choose the correct item from the among the given alternative and write its letter beside the item number in the table provided
- (i) What should be done if the results obtained from an experiment do not support the hypothesis \_\_\_\_\_
- A. The experiment should be changed  
B. The results should be left out  
C. Ideas for further testing to find a solution should be given  
D. A new problem should be identified
- (ii) An element A with the valance of 2 reacts with another element C with the valences of 1. What is the probable chemical formula between atoms of element A and element C  
A.  $A_2C_3$                       B.  $A_2C$                       C.  $AC_2$                       D.  $A_2C$
- (iii) The welders prefer the use of non- luminous flame for their work simply because \_\_\_\_\_
- A. Produce very hot flame                      C. It is easy to transport  
B. It is available                      D. Can be made by kerosene
- (iv) How do chemists refer to a mixture of milk and water? \_\_\_\_\_
- A. Miscible solution                      C. Immiscible solution  
B. Suspension                      D. Emulsion
- (v) What will happen if a drop of water contacts a white anhydrous copper (II) Sulphate? \_\_\_\_\_
- A. It will change pink  
B. Copper (II) Sulphate will start to form blue crystals  
C. It will turn a litmus paper neutral  
D. It will become a colorless hard compound of copper (II) sulphate
- (vi) Which of the following electronic configuration is of metals? \_\_\_\_\_
- A. 2: 8: 8: 1 and 2:8:8:7                      C. 2:8:3 and 2:8:6  
B. 2: 8:8:1 and 2:8:2                      D. 2:8:6 and 2:8:8:7
- (vii) Using the abbreviation  ${}^x_yM$  and M = an element X = mass number and y = atomic number. Choose the list that contains isotopes of the same element.
- A.  ${}_6M^{12}$ ,  ${}_6M^{13}$ ,  ${}_6M^{14}$                       C.  ${}_7M^{16}$ ,  ${}_8M^{17}$ ,  ${}_9M^{18}$   
B.  ${}_8M^{16}$ ,  ${}_7M^{16}$ ,  ${}_9M^{16}$                       D.  ${}_6M^{12}$ ,  ${}_8M^{16}$ ,  ${}_{10}M^{20}$
- (viii) The similarity between rusting of iron and burning magnesium in air isthat \_\_\_\_\_
- A. Use carbon dioxide                      C. Do not need water  
B. Use reduction processes                      D. Use up oxygen
- (ix) Calcium and magnesium are members of a group of elements in the periodic table called \_\_\_\_\_
- A. Alkaline earth metals                      C. Transition metal  
B. Alkali metals                      D. Amphoteric metals

- (x) The expression “nitric acid is a strong acid” may be explained as follows
- |                                 |                            |
|---------------------------------|----------------------------|
| A. It is strong oxidizing agent | C. It is highly ionized    |
| B. It is very corrosive         | D. It dissolves all metals |

**ANSWERS**

I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.

2. Match the items in list A with their responses in list B by writing the letter of the correct response below the item number in a table provided

<b>LIST A</b>	<b>LIST B</b>
(i) Burette (ii) Pipette (iii) Test tube (iv) Flasks (v) beaker	A. Used to accurately measure and dispense liquids B. Used for holding, heating and mixing liquids C. Used for measuring and holding liquids during experiment D. Used to measure specific volumes of liquids E. Used for holding chemicals or for heating substances for short period of time F. Measure only volumes G. Measure small amount of liquids H. Measure all required volumes during experiment

**ANSWERS**

<b>LIST A</b>	I.	II.	III.	IV.	V.	V.
<b>LIST B</b>						

**SECTION B (70MARKS)**

Answer **all** questions from this section

3. (a) Most of the farmers in Songwe region are interested to know how the knowledge of Chemistry is necessary in agricultural activities. Assume you are a chemist, educate these farmers on the application of chemistry in agriculture by giving five points .

- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_
- iv. \_\_\_\_\_  
\_\_\_\_\_
- v. \_\_\_\_\_  
\_\_\_\_\_

b) The Laboratory facilitators of a certain school was bought a small box which had a sign of Red cross. Most of the form one students, did not have the knowledge about the box. By using the knowledge that you have learnt from chemistry answer the following questions

i. What is the name given to that box?

\_\_\_\_\_

ii. Briefly explain the functions of four possible items that can be found in that box

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. (a) Mixing of different substances involves chemical and physical changes state whether the following is a physical or chemical change

i. Kerosene and water \_\_\_\_\_

ii. Iodine and sand \_\_\_\_\_

iii. Oil and seeds \_\_\_\_\_

iv. Petrol and diesel \_\_\_\_\_

(b) Matter exists in three states. With the help of illustrations explain how particles are arranged in the three states

Solid	Liquid	Gaseous

5. (a) Assume that it is the first day you are reporting at school and you find on debate the motion “ water is A compound and not a mixture “. With four points show how you will support the motion

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

(b) Why ship in sea water rust faster than in fresh water?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. (a) (i) Twangale went to buy a table salt which is a common name for the compound with the formula NaCl. Write the IUPAC name for the table salt.

(ii) Briefly describe why molecular formula is preferred than empirical formula

(b) A certain gaseous compound contains 82.8% of carbon and 17.2% of hydrogen by mass. The vapour density of the compound is 29. Calculate molecular formula (C = 12, H = 1)

7. (a) State properties of hydrogen gas made to be used in the following

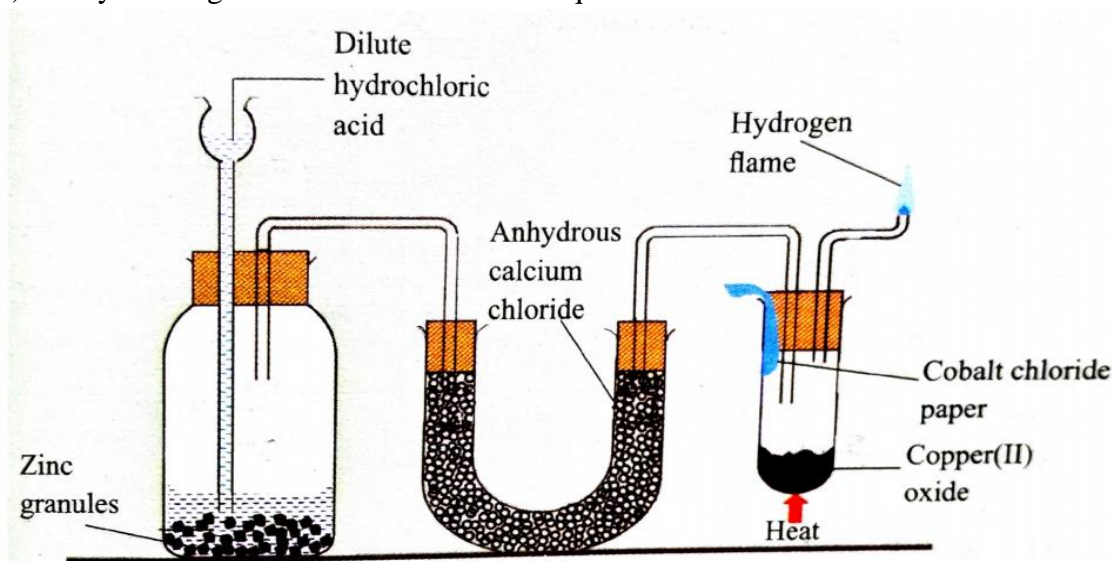
i. Production of oxy-hydrogen flame

ii. To fill weather balloon

iii. Manufacture of hydrochloric acid

iv. Manufacture of margarine

b) Study the diagram below and answer the questions that follow.



i. What happens to copper (II) oxide during experiment?

\_\_\_\_\_

ii. What happens to cobalt (II) chloride paper? Why is it used?

\_\_\_\_\_

iii. What is the role of  $\text{CaCl}_2$ ?

\_\_\_\_\_

\_\_\_\_\_

iv. What do you think can cause the size of the hydrogen flame to deteriorate

\_\_\_\_\_

\_\_\_\_\_

8. (a) (i) Suppose your laboratory is not having water, state three possible danger of using it

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(ii) How can one prove that the liquid chemical present in the laboratory is water?

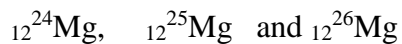
\_\_\_\_\_

(b) What chemicals are used at different stages of the water treatment?

\_\_\_\_\_

\_\_\_\_\_

9. (a) Magnesium (Mg) Has three stable isotopes



i. If there is 79% of  $^{12}_{24}\text{Mg}$  and equal amount of the other remaining two isotopes, calculate the % of  $^{12}_{25}\text{Mg}$

ii. Calculate the R.A.M of Magnesium

b) Use the knowledge that have to complete the following table below by indicating the Number of protons, neutrons and electrons of different atoms shown in the table below

<b>Isotope</b>	<b>Atomic mass</b>	<b>Mass number</b>	<b>Protons</b>	<b>Electrons</b>	<b>Neutrons</b>
Hydrogen $^1\text{H}$	1	1			
Carbon $^{13}\text{C}$	6	13			
Chlorine $^{37}\text{Cl}$	17	37			
Magnesium $^{24}\text{Mg}$	12	24			

**SECTION C (15 Marks)**

Answer question 10

10. Currently, the world is suffering from climatic change disaster which is caused by over dependent on forests as a source of fuels and overpopulation of waste material that pollute our environment, to overcome this problem is through the use of renewable source of energy that does not release harmful gases to the atmosphere. As student of chemistry prepare a report to convince the community to use the renewable source of energy while they are conserving the environment.