



Total Score

Name.....

School

Roll No

Republic of Somaliland

Somaliland National Examination Board

Form Four

Chemistry Examination

2023-2024

TIME 2 HOURS

Plus 10 minutes for reading through the paper

INSTRUCTIONS TO CANDIDATES

This paper consists of **10** printed pages.

Count them now. Inform the invigilator if there are any pages missing.

Exam consists of two Parts:

PART 1:	Multiple choice Questions	40 Marks
PART 2:	Structured Questions	60 Marks
TOTAL		100 Marks

- Answer ALL questions in Part 1 and 2.
- Extra papers and Mobile Not Allowed.

Use this page for rough work. It will **NOT** be marked.



For more learning resources, visit:- [Ombiology4u](https://Ombiology4u.com)

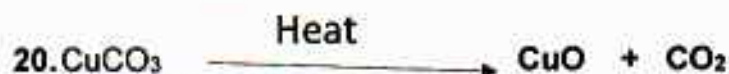


Part One: Multiple Choice Questions (20 X 2 Marks = 40 Marks)

1. Which of the following compounds is an ester: -
 - a. Butanol
 - b. Butyl ethanoate
 - c. Butene
 - d. Butane
2. Which of the following Organic compounds is unsaturated:-
 - a. Carboxylic acids
 - b. Alcohols
 - c. Alkane
 - d. alkene
3. If Carboxylic acid is reacted with an Alcohols what is formed :-
 - a. An Alcohol
 - b. An Alkane
 - c. An Alkene
 - d. An Ester
4. When Organic compound combust in a plenty of air the products are:-
 - a. Carbon dioxide only
 - b. Carbon monoxide and water
 - c. Carbon dioxide and hydrogen
 - d. Carbon dioxide and water
5. The Mass of 0.5 mole of Sodium Chloride is:
RAMs (Na=23, Cl=35.5)
 - a. 29 g
 - b. 30 g
 - c. 29.25 g
 - d. 28 g
6. How many moles are there in 200 gram of CaCO_3 ?
(Ca=40, O=16, C=12)
 - a. 1 Mole
 - b. 2 Mole
 - c. 3 Mole
 - d. 4 Mole

7. The mass percent of Hydrogen in Butane (C_4H_{10}) is:
(C=12, H=1)
- 16%
 - 17.2%
 - 82%
 - 80%
8. The relative formula mass of $CuSO_4$ is: (Cu=64, S=32, O=16)
- 80%
 - 81%
 - 82%
 - 83%
9. The charge of Strontium ion is:-
- 2-
 - 1+
 - 1-
 - 2+
10. The number of electrons barium atom loses to achieve noble gas electronic configuration is:-
- 1
 - 2
 - 3
 - 4
11. Which of the following does **NOT** contain ionic bonds:
- Sodium Oxide
 - Potassium Oxide
 - Sulphur Oxide
 - Silver Oxide
12. Which of the following occurs in an ionic bond:-
- Two atoms share electrons
 - Oppositely charged ions attract
 - Two atoms share more than two electrons
 - Like charged ions attract
13. The formula of the ion formed when calcium loses electrons is
- Ca^{-2}
 - Ca^{+}
 - Ca^{2+}
 - Ca

14. Covalent bond in which one atom (donates) both the shared electrons is called:
- Triple covalent bond
 - Double bond
 - Dative bond (or Coordinates)
 - All of the above
15. The only metal that is liquid at room temperature is :-
- Bromine
 - Mercury
 - Hydrogen
 - Sodium
16. The catalyst used in the manufacture of Sulphur (contact process) is:
- Nickle Oxide
 - Iron Oxide
 - Vanadium Oxide
 - Zinc Oxide
17. Which of the following non-metal could displace Bromine from Sodium Bromide
- Hydrogen
 - Chlorine
 - Oxygen
 - Nitrogen
18. Which of the following is **NOT** a properties of metals:-
- Brittle
 - Good conductor
 - Ductile
 - Sonorous
19. The Laboratory apparatus used to measure acids in Neutralization is:-
- Conical flask
 - Beaker
 - Burette
 - Funnel



The above reaction is:-

- Displacement
- Combination
- Decomposition
- Combustion

PART TWO Structured Questions

(10 X 6=60 marks)

1. Ethene molecule react together to form polyethene:



- a. Name the two types of polymerization reaction? (2 Mark)

.....
.....

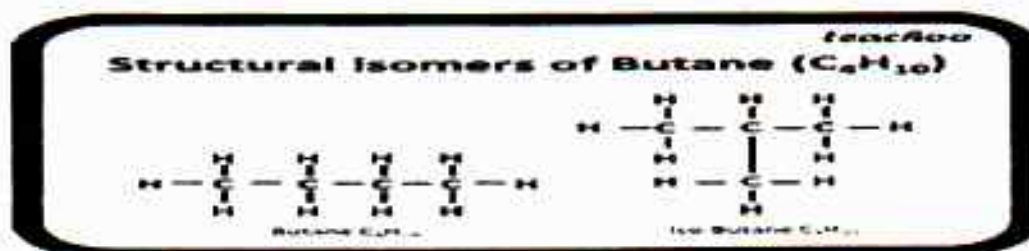
- b. State the two forms of Polyethene formed? (2 Marks)

.....
.....

- c. List any two useful properties of Polyethen (2 Marks)

.....
.....

2. The structural formula of organic compound shown below.



- a. Write down the molecular formula of the above compounds? (2 Marks)

.....
.....

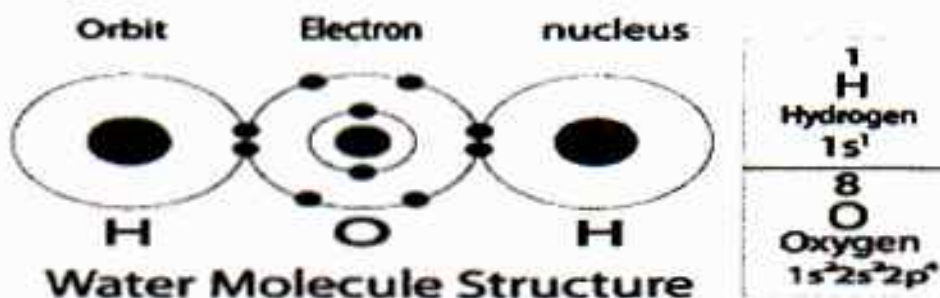
- b. Give the IUPAC Name of the above organic molecules? (2 Marks)

.....
.....
.....

- c. What do we mean by the term Isomers? (2 Marks)

.....
.....
.....

3. In Water molecule Hydrogen atoms and Oxygen atom fill their outer shell.



a. How many electrons are shared in the above molecule? (2 Marks)

.....

.....

b. How many lone pair does the above molecule have? (2 Marks)

.....

.....

c. What is polar covalent bond? (2 Marks)

.....

.....

4. This diagram shows ammonia molecules



a. How many electrons are shared? (2 Marks)

.....

.....

b. What is triple covalent bond? (2 Marks)

.....

.....

c. State two uses of Ammonia. (2 Marks)

.....

.....

5. Sulphuric acid is a common acid used in school Laboratory (H_2SO_4).

- a. Work out the relative formula mass of Sulphuric acid? (S=32, O=16) (2 Marks)

.....

.....

.....

- b. Calculate the mass percent of Oxygen in Sulphuric acid? (2 Marks)

.....

.....

.....

.....

.....

- c. Calculate the mass percent of Sulphuric acid? (2 Marks)

.....

.....

.....

.....

.....

6. A compound consist of 40% Carbon, 6.7% of Hydrogen and 53.3% Oxygen.

- a. Find the Empirical formula of the compound? (2 Marks)

.....

.....

.....

.....

.....

.....

.....

.....

- b. Define relative atomic mass. (2 Marks)

.....

.....

.....

- c. Define relative formula mass? (2 Marks)

.....

.....

.....

.....

7. This table shows the number of protons and electrons of Ion and Atom.

Particles	Protons	Electrons
M	11	10
N	8	10
O	12	12
P	20	20

IN THE ABOVE PARTICLES

a. Which particles is a positive ion? (2 Marks)

.....
.....

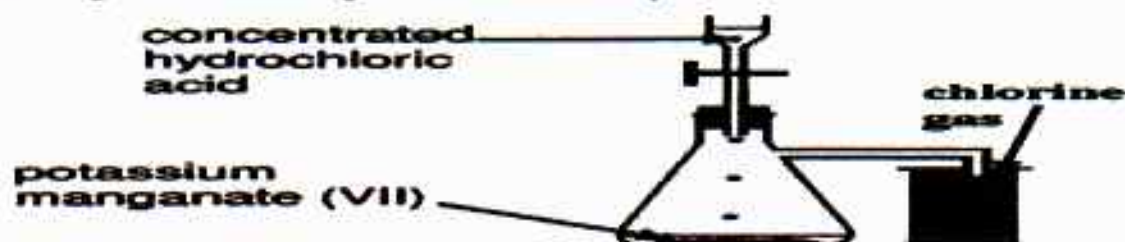
b. Which particle is a negative ion? (2 Mark)

.....
.....

c. Which two particles are neutral atoms? (2 Marks)

.....
.....

8. This diagram show making chlorine in laboratory.



a. How chlorine is made in the Lab. (2 Marks)

.....
.....
.....

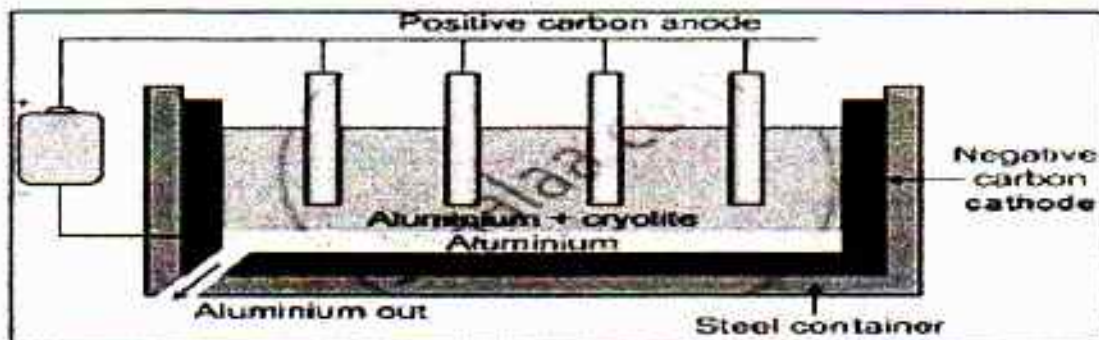
b. How chlorine is made in Industry? (2 Marks)

.....
.....

c. State two uses of Chlorine gas. (2 Marks)

.....
.....

9. This diagram shows an Aluminium Oxide electrolysis Tank :-



a. Name the raw materials used for the extraction of Aluminum? (2 Marks)

.....

.....

b. State two properties of Aluminum metal. (2 Marks)

.....

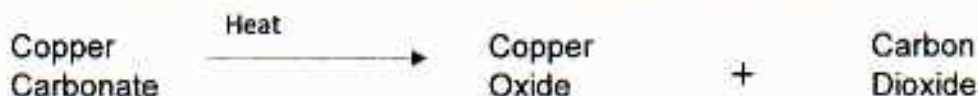
.....

c. List any two uses of Aluminum. (2 Marks)

.....

.....

10. Copper Carbonate can breakdown into Copper Oxide and Carbon dioxide.



a. Define a chemical equation. (2 Marks)

.....

.....

b. Write a balanced chemical equation of the above reaction? (2 Marks)

.....

.....

c. List any two uses of Carbon dioxide gas? (2 Marks)

.....

.....