

Candidate's examination number _____

SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM THREE ENTRANCE EXAMINATION

043

CHEMISTRY

TIME: 2:30 HOURS

MONDAY, 28TH DECEMBER 2020 A.M

INSTRUCTIONS TO CANDIDATES

1. This paper consists of **THREE (3)** sections A, B and C.
2. Answer **ALL** questions in sections A and B, and any **TWO (2)** questions in section C. Question (9) is compulsory.
3. Write your examination number on each page.
4. All answers must be written in the space provided under each question.
5. Use a blue or black pen in writing. The diagrams must be drawn in pencil.
6. Cellular phones and unauthorized materials are not allowed in the examination room.
7. The following constants may be used
C =12, O= 16, H =1, Na =23, Ca =40

FOR EXAMINER'S USE ONLY		
QUESTION NUMBER	MARKS	SIGNATURE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9a.		
9b.		
10.		
11.		
TOTAL		

This paper consists of 10 printed pages

SECTION A: (30 Marks)

Answer ALL questions in this section.

1. Choose the correct answer and write its letter in the table below.
 - i. A person who studies chemistry is called a
 A. Scientist B. Chemist C. Biologist D. Chemical
 - ii. Item which can easily catch fire is known as
 A. Toxic B. Corrosive C. Flammable D. Explosive
 - iii. Bunsen burner produces the hottest flame when
 A. The air hole is closed B. The air hole is fully opened
 C. The air hole is half opened D. The gas tap is opened
 - iv. Positively charged ion is called
 A. Anion B. Neutral ion C. Cation D. Radical
 - v. The main physical states of matter are
 A. Two B. Four C. Three D. Five
 - vi. One of the following is an example of a chemical change
 A. Rusting of iron B. Melting of ice
 C. Cloud changing into rain D. Magnetizing of iron
 - vii. When Oxygen reacts with Sodium it forms
 A. Acidic oxide B. Neutral oxide
 C. Basic oxide D. Amphoteric oxide
 - viii. A gas that is used as a fuel
 A. Nitrogen B. Methane
 C. Oxygen D. Water vapour
 - ix. Pure water boils at
 A. 80°C B. 70°C C. 100°C D. 1000°C
 - x. Common salt dissolves more in
 A. Kerosene B. Water C. Petrol D. Diesel

ANSWERS

i.	ii.	iii.	iv.	v.	vi.	vii.	viii.	ix.	x.

2. Match the meanings in **LIST A** with their corresponding situations in **LIST B**. Write the letter of the correct answer in the table below.

LIST A	LIST B
i. Swallowing, inhaling or absorbing harmful substance in the body.	A. Bleeding
ii. Loss of consciousness caused by lack of sufficient blood and oxygen to the brain.	B. Burns
iii. The condition in which the body system is unable to take enough blood to the vital organs.	C. Fainting
iv. Blockage of upper part of the air way by food or other objects.	D. Bruises
v. Skin injury that causes a change in the colour of the skin.	E. Nose bleeding
vi. Injuries resulting from the body coming into contact with heat or harmful chemicals.	F. Poisoning
vii. The condition in which the lungs are not getting enough oxygen causing difficulty in breathing.	G. Vomiting
viii. Occurs when a person comes into direct contact with electricity.	H. Choking
ix. The loss of blood usually occurs from a visible wound.	I. Shock
x. The removal of the content of the stomach through the mouth.	J. Electrical shock
	K. Suffocation
	L. Drowning

ANSWERS

i.	ii.	iii.	iv.	v.	vi.	vii.	viii.	ix.	x.

3. Fill in the blanks. Use only one word for each space.
- Charcoal is made by the dry _____ of _____ in a limited supply of air.
 - In periodic table _____ are arranged according to the _____ of their atomic numbers.
 - Water can exist in different physical states namely solid, _____ and _____.
 - Heat is the _____ of being _____.
 - Atoms can be represented by symbols that indicate their respective _____ and _____ numbers.

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SECTION B: (50 Marks)
Answer ALL questions in this section.

4. a. Define the term Chemistry.

- b. Mention any five (5) fields where the knowledge of chemistry can be applied.

i. _____

ii. _____

iii. _____

iv. _____

v. _____

5. a. Define the following terms

- i. Boiling point

- ii. Period

- b. Give reason(s) for each of the following cases in periodic table.

- i. Group I elements are called alkali metals

- ii. Electro negativity increases from left to the right across the period

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iii. Potassium is more reactive than sodium

iv. Neon and Argon do not form compounds with any element

6. a. Give the meaning of the following terms.

i. Element

ii. Solvent

iii. Compound

b. Write down the symbol of the following elements.

i. Iodine

ii. Magnesium

iii. Aluminium

iv. Neon

- c. i. Classify the following elements into metals and non metals.

(Carbon, Oxygen, Calcium, Nitrogen and Lithium)

Metals	Non metals

- ii. Why is air a mixture and not a compound?

7. a. i. Name four (4) importance of water in everyday life.

- ii. How can you test the presence of water in the air?

- b. Name two (2) physical properties of water.

- i. _____
- ii. _____

8. a. What is the meaning of scientific procedure?

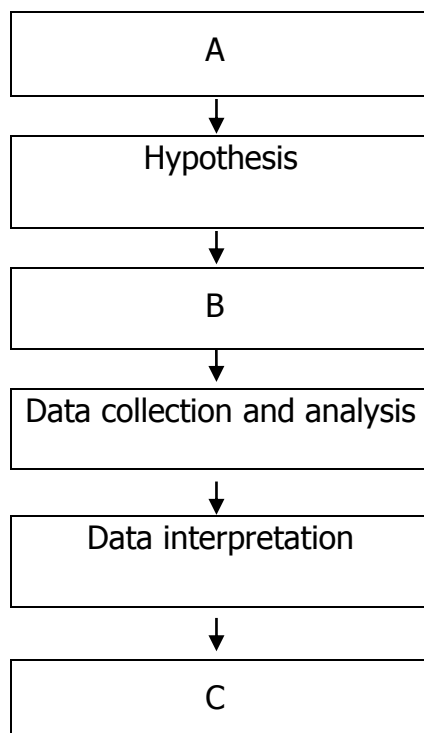
- b. Mention three (3) types of variable as used in scientific procedures.

i. _____

ii. _____

iii. _____

- c. Write the missing steps A, B and C in the scientific procedures from the following flow chart in the space provided below.



A. _____

B. _____

C. _____

SECTION C: (20 marks)

Answer ANY TWO (2) questions from this section.

Question **NINE** (9) is **COMPULSORY**, answer either (9a) or (9b).

9. a. i. Study the table below which shows reactions between some non- metals with Oxygen, then fill the blanks.

Non-metals	How it burns	Colour of the flame	Name of product formed
Carbon	_____	Yellow-white flame	_____
Phosphorous	Burns brightly	_____	Phosphorous (v) oxide
Sulphur	_____	Blue flame	_____

- ii. Outline two (2) chemical properties of Oxygen.

- iii. List down any two (2) uses of Oxygen.

- iv. How can Oxygen be tested in the laboratory?

9. b. i. Name the methods that can be used to separate the following mixtures in the laboratory.

Mixtures	Methods
Iodine and sand	
Oil from ground nut	
Pure water from muddy water	
Water from the mixture of oil and water	
Water and ethanol	

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ii. Draw the following apparatus in the table below.

Liebig condenser	Tripod stand

10. a. Define the term fuel.

b. List two (2) classes of fuels according to their occurrence.

c. List down five (5) sources of energy which are environmental friendly.

d. Mention four (4) ways in which energy can be converted from one form to another.

11. a. Briefly explain three (3) sub-atomic particles.

- b. What is isotopy?

- c. Consider the following atoms $^{12}_6\text{C}$ and $^{13}_6\text{C}$, find their:

- i. Atomic number and mass number of each atom.

- ii. Number of neutrons in each atom.

- iii. What do you observe from these two atoms?
