

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
UKEREWE DISTRICT COUNCIL



FORM TWO MOCK EXAMINATION

032

CHEMISTRY

TIME 2: 30 Hours

YEAR; 2025

INSTRUCTIONS

1. This paper consists of section **A, B** and **C** with total number of **ten (10)** questions.
2. Answer all questions in the space provided
3. All writing must be in **black** or **blue** pen except for diagrams which must be in **pencil**.
4. Write your **examination number** at the top right corner of every page
5. The following atomic masses may be used; H = 1, O = 16, S = 32, Cl = 35.5, Na = 23, C = 12, Ag = 108, N = 14

SECTION A (15 MARKS)

Answer all questions in this section

1. Items (i) – (x) contains of multiple choices questions, choose the letter of the most correct response and write it against the number in the box provided
 - i) While working in a chemistry laboratory, you notice a spill of a corrosive substance on a lab bench. What should be your immediate action
 - A. Wipe it with a paper towel and continue working
 - B. Alert your lab instructor and follow the provided spill cleanup procedures
 - C. Leave the spill unattended and inform your labpartner
 - D. Pour water over the spill to dilute the substances
 - ii) In a delicate experiment requiring precise and controlled heating for glass blowing, which heat source should a skilled glassblower use to ensure that the glass is heated evenly without the risk of overheating or cracking?
 - A. Blowpipe
 - B. Candle
 - C. Kerosene burner
 - D. Charcoal burner
 - iii) In a laboratory a student is given a sample of an unknown substance. The student follows systematic scientific procedures to determine its chemical composition.
 - A. Confirming the identity of the substance
 - B. Ignoring the unknown substances
 - C. Using the substance without analysis
 - D. Allowing any reaction to take place
 - iv) A farmer is using fertilizer to enhance the growth of crops in the field. Which property of matter is significant in determining how well the plants will absorb nutrients from the fertilizer?
 - A. The size of the fertilizer bags
 - B. The solubility of the fertilizer in water
 - C. The weight of the tractor used for application
 - D. The shape of the crop's rows
 - v) In conducting combustion process for energy production which component of air is essential for combustion reactions to occur efficiently?
 - A. Nitrogen
 - B. Oxygen
 - C. Carbon dioxide
 - D. Argon

- vi) Which of the following process cannot be grouped into physical change:
- Cutting of iron into pieces
 - Gridding of charcoal into power
 - Heating of copper
 - Burning of zinc metal
- vii) One of the following is the reverse of deposition process
- Melting
 - Freezing
 - Alloying
 - Sublimation
- viii) Which of the following in the chemical substance used to test the presence of water vapour in air by changing the blue anhydrous to pink hydrated compound
- Copper (II) Sulphate
 - Calcium chloride
 - Cobalt II chloride
 - Potassium permanganate
- ix) Both hydrogen and oxygen can be collected by
- Both chemical and physical process
 - Downward displacement of water
 - Upward displacement of water
 - Glowing wooden splint
- x) Syrups are examples of
- Solution
 - Suspension
 - Homogenous mixture
 - Filtrates

ANSWER

i	ii	iii	iv	v	vi	vii	viii	ix	x

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

LIST A		LIST B
i)	Energy value of a fuel	A. Amount of heat absorbed when one gram of a fuel burns
ii)	Effects in environment	B. Amount of heat given out when one gram of a fuel burns
iii)	Velocity of combustion of a fuel	C. The temperature to which the fuel should be heated before it starts burning
iv)	Ignition point of a fuel	D. The rate at which fuel burns
v)	Pyrometric effect of a fuel	E. The highest temperature that can be reached by a burning fuel
		F. The amount of heat absorbed when one mole of a fuel burns.
		G. The lowest temperature required to ignite one mole of a fuel
		H. Leave solid residue

ANSWER

i	ii	iii	iv	v

SECTION B (70 MARKS)

Answer all questions from this section

3. You need to solder some components onto a circuit board but you are unsure which type of flame is for soldering. You know that there are two types of flames, luminous and non-luminous flames
- a) Explain the five key differences between luminous and non-luminous flame

Luminous flame	Non-luminous flame
i.	
ii.	
iii.	
iv.	
v.	

b) Discuss which type of flame would be more suitable for soldering and why?

4. a) i) The use of modern technology has enabled scientists to carry out experiments on the atom that Dalton could not give. Give out four modern concept of Dalton's atomic theory

ii) Show the representation of nucleus of the potassium atom, then draw the electronic configuration of potassium.

- b) Neon has three isotopes ^{20}Ne (90.5%), $^{21}_{10}\text{Ne}$ (0.3%), $^{22}_{10}\text{Ne}$ (9.2%)
What is the relative atomic mass of neon?

5. a) Your school is organizing Chemistry exhibition, and you are selected to create an informative chart explaining the structure of the periodic table to junior students

i) In your own word, explain the meaning of the term periodicity?

ii) Create a simple, labeled diagram of the periodic table, clearly identifying and naming the five major blocks of elements

b) It is possible to place hydrogen in group seven? Give three reasons of placing hydrogen in group seven in a periodic table

- i. _____
- ii. _____
- iii. _____

6. a) You are working with classmates on a chemistry experiment in the school lab. During the session, some students spill liquids, ignore procedure steps, use the wrong equipment, and the room has poor ventilation. What accidents can be caused by the following wrong chemistry laboratory practices?

i) Failure to follow night procedures for the given experiment

ii) Spilling of liquids on the floor

iii) Wrong use of equipment

iv) Poor ventilation

b) You have been assigned to perform presentation about rust prevention for metals used in daily life. List five effective methods that can be used to prevent rusting for metals used in daily life.

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____

7. a) Explain how physical change differs from chemical change by using five (5) points

Physical change	Chemical change
i.	
ii.	
iii.	
iv.	
v.	

b) Imagine a world where matter could not change its state. Describe five (5) possible consequences that could happen on daily life and natural processes.

- i. _____

- ii. _____

- iii. _____

- iv. _____

- v. _____

8. a) i) You are selected as a lab assistant. The teacher asks you to explain to new students why lab safety is important. (Two reasons)

ii) Ashirina notices some chemical containers in the lab are not labeled properly. What should be done for chemicals which are not correctly labeled in a laboratory? (Two suggestions)

b) Why is Chemistry is so important for agriculture development? Give three reasons

9. a) i) Give out four properties of radicals

ii) What is the oxidation number of Sulphur in SO_4^{2-} ?

b) By showing clear steps, give the formula of the compound of calcium and chlorine atoms.

SECTION C (15 MARKS)

Answer question **number 10**

10. a) Imagine you are working with an engineering team developing solutions for clean energy and industrial manufacturing. The team wants to explore the industrial and scientific applications of hydrogen. Using your knowledge of Chemistry, explain how hydrogen can be used based on g to the following properties

Property	Use
i) Reducing agent	
ii) Lighter than air	
iii) Highly flammable	
iv) Readily react with other substances ed. Nitrogen and chlorine	

b) i) List four places (or substances) in which hydrogen can be found

ii) What are the four main methods for laboratory preparation of hydrogen?

c) Give reason for the following

i) Hydrogen is collected by downward displacement

ii) Hydrogen is not found free on its own on the Earth's surface.
