

**Students Assessment Number \_\_\_\_\_**  
**THE PRESIDENT'S OFFICE**  
**REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**  
**SUMBAWANGA MUNICIPAL COUNCIL**



**FORM TWO PRE-FTNA ASSESMENTS**  
**032 CHEMISTRY**

**Time 2:30Hours**

**October, 2022**

**Instructions**

1. This paper Consist of sections A, B and C with total of 10 questions
2. Answer all questions in both sections
3. All writings should be in blue/black ink
4. All diagrams should be drawn in pencil
5. Write your assessment number at the top right corner

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**SECTION A (15Marks)**

1. For each of the items (i)-(x), choose the correct answer from among the given alternative and write its letter in the box provide.
  - i. The welders prefers to use non luminous flame for their work simply because  
(A)It is available (B) it is easy to transport  
(C) produce very hot flame (D) can be made by kerosene
  - ii. Spatula in the laboratory is used for scooping what types of substances?  
(A)Liquid and gases (B) solids and liquids  
(C) Powdery and gases (D) Solids and powdery
  - iii. There are two particles inside the nucleus which one contributes the net change of that nucleus?  
(A)Dalton (B)Protons (C) Electrons (D) Neutrons
  - iv. Why oxygen as one of the components of air Is unique?  
(A)It has ability to burn (B) it support combustion  
(C) it is diatomic gas (D) combine with carbon dioxide
  - v. Why it is necessary to boil drinking water?  
(A) To make it tasteless (B) To remove impurities  
(C) to kill micro-organism (D) To make it taste less

vi. How do chemists refer to a mixture of milk and water?

- (A) Miscible solution (B) Suspension (C) Immiscible solution (D) Emulsion
- vii. How can one prevent rusting in fragile instruments like camera?  
 (A) By galvanization (B) By using silica gel (C) By using oil (D) By using ethanol
- viii. The oxidation state of metallic element is always  
 (A) Negative (B) Positive (C) Zero (D) Neutral
- ix. Which of the following is not man-made product of applying chemistry?  
 (B) Sugar (B) Fertilizer (C) Milk (D) Vaccines
- x. The atomic number of element R is 9 What is its electronic configuration?  
 (A) 2:4:3 (B) 2:5:2 (C) 2: 7 (D) 2:6:1

**ANSWERS**

i	ii	iii	iv	v	vi	vii	viii	ix	x

2. (a) 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. Spirit in water	A. Winnowing
ii. Sodium Chloride in water	B. Layer separation
iii. Oil in sunflower	C. Fractional distillation
iv. Ammonium Chloride crystals in sand	D. Picking
v. Maize and husk	E. Solvent extraction
	F. Sublimation
	G. Decantation
	H. Evaporation

LIST A	i	ii	iii	iv	v
LIST B					

**SECTION B: (70MARKS)**

3. (a) Mrs. Msema kweli was addressing the villagers about use of water for economic values. What 4 values will she tell the villagers
- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_

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

(b) Is an air a mixture or a compound? Give 4 reasons

i) \_\_\_\_\_

ii) \_\_\_\_\_

iii) \_\_\_\_\_

iv) \_\_\_\_\_

4. (a) Do you think there are any reasons for providing first aid to the victim? If yes give four reasons.

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

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

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

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

(b) State the uses of the following items in a first aid kit.

i. The pair of scissors

\_\_\_\_\_

ii. The whistle \_\_\_\_\_

iii. Petroleum Jelly \_\_\_\_\_

iv. Sterile gauze \_\_\_\_\_

5. (a) State three sub-atomic particles and their respective charges.

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

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

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

(b) State the four modifications of Dalton's atomic theory

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

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

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

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

(c) Draw and write the electronic configuration for the atoms having the following atomic numbers.

(i)  ${}_4\text{Be}$

(ii)  ${}_{14}\text{Si}$

6. (a) Distinguish the following substances.

i. Homogenous mixture from heterogeneous mixture.

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ii. Miscible from immiscible liquids.

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iii. Saturated from unsaturated solution.

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(b) Give two chemical tests for pure water

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

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

7. (a) Asha wants to select a good fuel for domestic uses in her home. What things should she consider? (Mention six (6))

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

(b) Classify the following fuel as either primary or secondary fuel.

(i) Coke \_\_\_\_\_

(ii) Crude oil \_\_\_\_\_

(iii) Kerosene \_\_\_\_\_

(iv) Natural gas \_\_\_\_\_

8. (a) What properties of hydrogen gas made it to be used in the following?

i. As a fuel \_\_\_\_\_

ii. To fill weather balloons \_\_\_\_\_

iii. Manufacture of hydrochloric acid \_\_\_\_\_

iv. Manufacture of margarine \_\_\_\_\_

(b) Environmental pollution in most of rural areas in Tanzania is caused by using charcoal and firewood as a fuel. What will be the two alternative source of energy, they supposed to use for environmental conservation? (give reason for each)

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

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

(c) Why fossil fuels are referred to as non-renewable energy resources? (Give two reasons)

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

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

9. (a) You are provided with the following atoms, for each fill the informations below:-

(i)  $^{35}_{17}\text{Cl}$

protons = \_\_\_\_\_

Neutrons = \_\_\_\_\_

Electrons = \_\_\_\_\_

(ii)  $^1_1\text{H}$

protons = \_\_\_\_\_

Neutrons = \_\_\_\_\_

Electrons = \_\_\_\_\_

(b) Define the following

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

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

iii. Atomic number \_\_\_\_\_

v. Isotopes \_\_\_\_\_

**SECTION C (15 MARKS)**

10a)i. What do you understand by the word “Relative atomic mass”?

ii). Carbon has main isotopes,  $^{12}_6\text{C}$  and  $^{14}_6\text{C}$  with relative abundances 98.89% and 1.11% respectively. Calculate the relative atomic mass of Carbon.

b)i. Draw a diagram of laboratory preparation of oxygen gas from hydrogen peroxide and manganese IV oxide

(ii) Write the word equation for the reaction above (a)i

c) Answer the following questions with reference to the first 20 elements of the periodic table

i. Give the chemical symbol of element having:

- The smallest atomic size \_\_\_\_\_
- The largest atomic size \_\_\_\_\_

ii. Identify the element which are:

- Metals having three shells of electrons each \_\_\_\_\_
- Metals having 1 electron in the valence shell \_\_\_\_\_
- Noble gases \_\_\_\_\_

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**FORM TWO PRE-FTNA ASSESSMENT  
CHEMISTRY MARKING SCHEME 2022  
SECTION A (15 MARKS)**

**1. @01 mark**

<b>i</b>	<b>ii</b>	<b>iii</b>	<b>Iv</b>	<b>v</b>	<b>vi</b>	<b>vii</b>	<b>viii</b>	<b>ix</b>	<b>x</b>
<b>C</b>	<b>D</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>A</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>

**2. a) @01 mark**

<b>LIST A</b>	<b>i</b>	<b>li</b>	<b>iii</b>	<b>iv</b>	<b>v</b>
<b>LIST B</b>	<b>C</b>	<b>H</b>	<b>E</b>	<b>F</b>	<b>A</b>

**SECTION B (70 MARKS)**

**3. a)**

- i.** Used for production of energy
- ii.** Used for transportation eg ship and boats
- iii.** Used for irrigation in agriculture
- iv.** Used for construction of roads and buildings
- v.** Used for manufacturing of goods in industries
- vi.** Used for mining activities **Any four points @ 01 mark**

**b) i.** Air components can be separated by physical means

- ii.** when air mixes no sound or heat is observed
- iii.** The composition of air varies from place to place
- iv** No simple chemical formula of air **@ 01 mark**

**4 a) i.** To save life

**ii.** To shorten recovering time

**iii.** To reduce pain

**iv.** to prevent permanent disabilities **@ 01 marks**

**b) i.** for cutting gauze and other materials

**ii.** For calling help

**iii.** For smoothen the skin

**iv) For covering the wound against germs and dusts**

**@ 1.5 mark**

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5 a) Neutron = 0 charge

Protons = +ve charge

**@ 01 mark**

Electrons = -ve charge

b) i. Atom can be created or destroyed by nuclear reaction

ii. The element of the same atom may have different masses (isotopes)

**iii.** The atom consist of sub atomic particles called protons, neutrons and electrons **@ 01 mark**

iv. Atom combine in many different ratios to form complex compounds

c)i.  ${}_4\text{Be}$  = 2:2 then drawing

ii.  ${}_{14}\text{Si}$  = 2:8:4 then drawing

**@ 1.5 marks**

6 a) i. Homogeneous mixture is the one that mix uniformly in composition ,appearance and properties while heterogeneous mixture has different composition appearance and properties .

ii. Miscible liquids mix completely while immiscible liquids do not mix completely with each other.

**iii.** Saturated solution is one that can dissolve no more solute at a given temperature while unsaturated solution can still dissolve more solute at a given temperature .**@ 02 marks**

b) i. Pure water turns white anhydrous copper II sulphate blue

**ii.** Water turns blue cobalt chloride paper to pink **@ 02 marks**

7. a) i. Affordability

ii. Availability

iii. Easy transportation

iv. High energy value

v. produce less smoke

**vi.** Moderate velocity of burning

**@01 mark**

b) i. secondary

ii. primary

iii. Secondary

iv . Primary

**@01 mark**

8 a) i. Highly flammable

ii. It is lighter than air

iii. React with other chemical substances

iv. It is reducing agent @01 marks

b) i. Solar energy since it is available and environmental friendly

ii. Biogas because it produce no waste product on production and heating

@1.5 mark

c) i. It can not replenished for a short period of time

ii. It is not environmental friend ( Associated with emission of harmful gases)

@1.5 mark

9.a) i. protons = 17, neutrons =18.5 , electrons =17.

ii. protons =01 , neutrons = 0, electrons = 01 . @01 mark

b) i. Atom is the smallest particle of an element that has all chemical properties of that element .

ii. Energy is the ability of doing work.

iii. Is the number of protons in the nucleus of the atom .

iv. Atoms of the same elements having the same number of protons but different number of neutrons @01 mark

### SECTION C (15 Marks)

10 (a) is the average mass of one atom of the element relative to  $1/12^{\text{th}}$  the mass of one atom of carbon -12 01 marks

(a) ii.  $12 \times 98.89/100 + 14 \times 1.11/100 = 12.02$

$11.8668 + 0.1554 = 12.0222$  03 Marks

B )i. A good diagram = 01 marks , labeling correctly =04 marks

ii. Hydrogen peroxide  $\xrightarrow{\text{MnO}_2}$  Water + Oxygen 01 mark

**c)i**

- H and He
- Ca and K

ii.

- Al, Na and Mg
- Na, K and Li
- He, Ar and Ne    **@ 01 mark**