

**THE PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**

**CHEMISTRY MARKING SCHEME 2023
SECTION A (15 MARKS)**

1. @01 mark

i	ii	iii	iv	v	vi	vii	viii	ix	x
C	D	B	B	C	A	B	B	C	C

2.a) @01 mark

LIST A	i	ii	iii	iv	v
LIST B	C	H	E	F	A

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

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

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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