

**PRESIDENT'S OFFICE**

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT – RALG

**COAST REGION****REGIONAL FORM TWO SECONDARY EDUCATION ASSESSMENT****032****CHEMISTRY****Time: 2.30 Hours****Year 2024****Instructions**

1. This paper consists of sections A, B and C with a total of **ten (10)** questions.
2. Answer all questions in sections in the spaces provided.
3. Section A carries fifteen (15) marks, section B carries seventy (70) marks and section C carries fifteen (15) marks.
4. Cellular phones and any unauthorized materials are not allowed in the assessment room.
5. Write your **Assessment Number** at the top right corner of every page.
6. The following atomic masses may be used:

**H = 1, O = 16, S = 32, C = 12, Na = 23****FOR ASSESSOR'S USE ONLY**

<b>QUESTION NUMBER</b>	<b>SCORE</b>	<b>ASSESSOR'S INITIALS</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		
<b>4</b>		
<b>5</b>		
<b>6</b>		
<b>7</b>		
<b>8</b>		
<b>9</b>		
<b>10</b>		
<b>TOTAL</b>		

**Answer all questions in this section**

1. For each of the following items (i) - (x) choose the most correct answer from among the given alternatives and write it in the space provided.
  - i.) An Isotope of Cadmium has an atomic number of 48 and a mass number of 112. This Means that cadmium atom has.
    - A. 48 protons, 64 neutrons and 48 electrons.
    - B. 64 protons, 48 neutrons and 64 electrons
    - C. 48 protons, 112 neutrons and 48 electrons
    - D. 112 protons, 48 neutrons and 112 electrons
  - ii.) Wind is promising future source of energy because: -
    - A. It does not produce harmful gases
    - B. It does not involve chemical reaction
    - C. It is renewable
    - D. It cannot be seen
  - iii.) Which among of the following sets of materials can cause fire outbreak?
    - A. Oxygen, heat and carbon dioxide
    - B. Oxygen, form and fuel
    - C. Oxygen, heat and fuel
    - D. Oxygen, carbon dioxide and fuel
  - iv.) The name given to a colourless and highly flammable gas used in the production of Ammonia is
    - A. Hydrogen
    - B. Oxygen
    - C. Carbon dioxide
    - D. Helium
  - v.) The part of a bunsen burner that control the amount of air coming is called
    - A. Air hole
    - B. Collar
    - C. Jet
    - D. Barrel
  - vi.) Identify the name given to burns caused by hot liquids or vapour.
    - A. Injuries
    - B. Scars
    - C. Scalds
    - D. Wounds
  - vii.) Factors in an experiment that can be manipulated to get desired results are called:
    - A. Controlled variables
    - B. Manipulated variables
    - C. Dependent variables
    - D. Independent variable
  - viii.) Which of the following is an example of chemical change?
    - A. Melting of butter
    - B. Breaking glass
    - C. Mixing Milk and water
    - D. Burning leaves.
  - ix.) Sugar and water are mixed to give a solution. What name is given to sugar in the solution?
    - A. Solute
    - B. Suspension
    - C. Solvent
    - D. Solution
  - x.) Which term describes a rapid chemical reaction that releases energy in the form of heat and light?
    - A. Ignition
    - B. Reactivity
    - C. Combustion
    - D. Heating.

**ANSWERS**

i	ii	iii	iv	v	vi	vii	viii	ix	x

**Candidate's Index Number.....**

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

LIST A	LIST B
i.) Washing out foreign particle from eye and cleaning wounds.	A. Antiseptic
ii.) Cleaning wounds to kill germs and bacteria	B. Detergent
iii.) Preventing the skin from moisture loss through evaporation	C. Gentian violet
iv.) Treating fungal infection	D. Iodine tincture
v.) Washing hands, wounds and equipment	E. Petrollium jelly
	F. Saline
	G. Sterile gauge

**ANSWERS**

i	ii	iii	iv	v

**SECTION B (70 Marks)**

**Answer all questions in this section**

3. (a) Briefly explain the importance of the following equipment's in the Laboratory: -

- i. Laboratory coat .....
- ii. Safety goggles.....
- iii. Gloves.....
- iv. Protective masks.....
- v. First aid kit .....

(b) Erick found six chemical containers each having the following chemica symbols. Give the common names of the symbols.

Ag	Cu	Al	Pb	Si	Zn

(c) Silvia accidentally mixed cooking oil and water when she was cleaning household utensils at home

- i. Suggest one simple method that can be used by Silvia to obtain cooking oil from water
- ii. What property of cooking oil makes it possible to obtain it from water?

4. (a) A solution of salt is said to be a Mixture. Justify the statement using four points

- i.)
- ii.)
- iii.)
- iv.)

**Candidate's Index Number** .....

(b) Justify each of the following statements.

- i.) Melting of ice is regarded as a Physical Change  
.....
- ii.) Rusting of iron is regarded as a chemical Change:  
.....
- iii.) Some of chemical symbols of elements are written in rattin worlds  
.....
- iv.) Its advisable to use an evaporating dish instead of a conical flask to evaporate a solution:  
.....
- iv.) It is important to observe warning signs on a chemical container:  
.....
- v.) In filtration process, the filtrate passes the filter paper while the residue does not:  
.....

5 (a) When Hydrogen Peroxide is mixed with catalyst of Manganese (iv) Oxide, colourless gas X is produced. The gas is collected in a gas jar by downward displacement of water method. Use this information to answers the questions below;

- i.) Name gas X.....
- ii.) Write a molecular equation for production of gas X.....
- iii.) How can you test gas X ? .....
- iv.) Why gas X is collected over water?.....
- v.) Mention two uses of gas X  
.....
- vi.) Mention three physical properties of gas X  
.....

(b) A mass of 20.20g of petrol was burnt in air the heat produced was used to heat 2.5 litres value of water. Given that the heat value of petrol is  $43,640 \text{ kJ/kg}$  by how much could the temperature of water be change? Given that: - Specific heat capacity of water =  $4.18 \text{ kJ/k}$ , Density of water  $1000 \text{ kg/m}^3$ .

6. (a) With examples explain the given terms as used in chemistry

i. Fire extinguisher: .....

ii. Combustible Materials: .....

**Candidate's Index Number.....**

- (b) Identify four stages of extinguishing a carbon dioxide extinguisher
- i) .....
  - ii) .....
  - iii) .....
  - iv) .....

- (c) Mr. Msaki was doing experiment Concerning flame test of different chemical substance in the Laboratory Unfortunately coat caught fire.

i.) Briefly explain which fire extinguishing items you will use to help him extinguish fire from his Laboratory coat. ....

ii.) Which fire extinguisher is not advice to use to put off fire caught on the Laboratory coat of Mr. Msaki? .....

7. (a) State four Modern Dalton's atomic Theories.

- i) .....
- ii) .....
- iii) .....
- iv) .....

- (b) Oxygen exists naturally in three different Isotopes which are  $^{16}_8\text{O}$  (99.76%),  $^{17}_8\text{O}$  (0.04%) and  $^{18}_8\text{O}$  (0.20%). Calculate the relative atomic Mass of oxygen.

- (c) Consider elements  $_{11}\text{T}$  and  $_{17}\text{Q}$  which of the two element is more electronegative? Explain.

8. (a) Define the followings terms

- a) Fire fighting .....
- b) Combustion.....

- (b) From the table below, fill the burning materials from different classes of fire

CLASS	Burning materials
A	
B	
C	
D	
E	

**Candidate's Index Number.....**

(c) From the table below, write an example of application of combustion of each area

AREA	EXAMPLE OF APPLICATION
Laboratory	
Home	
Industries	
Transport	

9. (a) With one reason briefly explain why

(i) When iron sheets are exposed to wet air for a long time, they turn brown in colour

(ii) Why are commodities like hand bags and camera bags for sale packed with silica gel?

(iii) Why is it not advised to use water for extinguishing class B and C fire?

(b) Study the given periodic table and answer the questions that follow

I	II	III	IV	V	VI	VII	VIII
A							B
C		D					E
F					G	H	
	J						

Use the letters shown in the periodic table above to identify

- Element with zero valency.....
- The atom that forms the lightest gas.....
- The alkaline earth metal.....
- An element with the electronic configuration of 2:8:1.....
- The electronic configuration of  $J^{2+}$ .....

### SECTION C (15 Marks)

10. Water is one of the most plentiful and essential compounds on Earth. It is essential for the sustenance of all living things. As a form two student: -

(a) By using diagram describe stages or processes of water cycle.

b) Briefly explain the role of water to different economic activities (6 points).

- .....
- .....
- .....
- .....
- .....
- .....