Candidate's name/ Index number .....

THE UNITED REPUBLIC OF TANZANIA
THE PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
SECONDARY SCHOOL

FORM TWO EXAMINATION
032 CHEMISTRY

Time: 2½ Hours **2024**

Instructions:

1. This paper consists of sections A and B with a total of ten (10) questions.
2. Answer ALL questions in the spaces provided.
3. All writing must be in blue or black ink, except drawing, which must be in pencil.
4. Cellular phones and any unauthorized materials are **not** allowed in the examination room.
5. Write your **Examination Number** at the top right corner of every page.

QUESTION #	MARKS	INITIALS OF EXAMINER
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Total		

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SECTION A (15 Marks)
Answer all questions

1. Choose the most correct answer among the given alternatives and write down the answer in the space given.

(i) The most common source of heat used in laboratory is
   A. Spirit lamp
   B. Bunsen burner
   C. Liquefied petroleum gas burner
   D. Charcoal burner

(ii) The following products are made in the factories by using the knowledge of chemistry:
   A. Toothpaste and soap
   B. Sand and firewood
   C. Chalks and clothes
   D. Beers and soda beverages

(iii) Which of the following is the purpose of using sterile gloves when administering First Aid?
   A. To make the victim think you are a doctor and so raising the hope of getting better
   B. To kill germs since it is a replacement of a disinfectant.
   C. In order to relieve pain experienced by the victim.
   D. In order to avoid infection

(iv) If you want the Bunsen burner flame to have the same colour as the candle flame you must;
   A. Have the air hole completely open
   B. Turn on a large supply of gas
   C. Have the air holes completely closed
   D. D. Have more candle burning

(v) Which of the following is used in burning powders in jars,
   A. Combustion spoon
   B. Bunsen burner
   C. Desiccator
   D. Crucible

(vi) Keeping all chemicals in properly labelled containers is,
   A. A time consuming activity that should be done only during spare time
   B. An old way of looking after the laboratory
   C. Not important as long as you have a good memory
   D. A laboratory safety measure

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(vii) On his first experiment, Seypalm dissolved sulphuric acid in water and heat was evolved. In his second experiment he dissolved sugar in water and no heat was evolved or absorbed. He concluded that: -

A. His first experiment was a physical change
B. Both of her experiments were physical changes
C. His second experiment was a chemical change
D. His first experiment was a chemical change

(viii) Regularly inspecting stored chemicals in the chemistry laboratory to ensure they have not expired is considered as,

A. A requirement when it comes to laboratory safety measures
B. Not of any importance since chemicals in the chemistry laboratory cannot expire.
C. Sheer wastage of time as there are more important things to do in the laboratory
D. A newly proposed measure that is not widely accepted by Chemists.

(ix) Why must you follow the correct experimental procedures in the laboratory?

A. To avoid getting fired by the supervisor
B. To obey order and instructions when the teacher is around
C. To avoid accidents and injuries during the experiment.
D. To score 'A' grade from the good results of the experiment.

(x) A chemical can stimulate a burning substance to burn efficiently and faster is called,

A. A flammable substance
B. An oxidizing agent
C. Corrosive substance
D. A harmful or irritant substance

ANSWERS

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)

2. Match the mixtures in list A with the correct separation method in list B.

List A	**List B**
(i) Picking and holding hot substances and apparatus (ii) Crushing or grinding substances (iii) Scooping small quantities of powder or crystalline chemicals (iv) Measurement specific volumes of liquids (v) Cooling hot liquids	A. Spatula B. Condenser C. Funnel D. Wire gauze E. Mortar and pestle F. Tripod stand G. Tongs H. Pipette

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ANSWERS

List A	(i)	(ii)	(iii)	(iv)	(v)
List B					

SECTION B (70 Marks)

Answer all questions

3. Laboratory rules are established in order to avoid accidents, injuries and damages to property. State any ten such important laboratory rules:

(i) ……

(ii) ……
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(iii)……
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(iv)……
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(v) ……
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(vi)……
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(vii) ……
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(viii) ……
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(ix)……
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(x) ……
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4. (a) Draw a well labeled diagram of a luminous flame.

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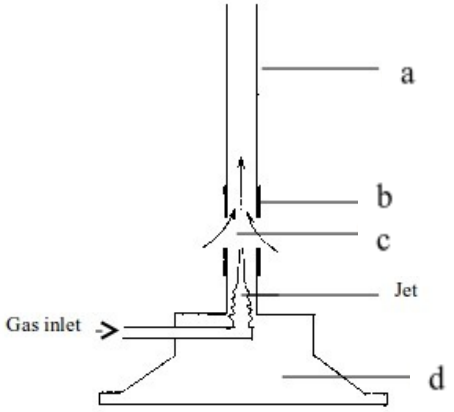
(b) Below is a diagram of a Bunsen burner: Give the names of the parts labeled a, b, c, and d, and then state the function of each of the parts a, b , c, d.



Part	Name	Function
a		
b		
c		
d		

5. (a)All living things on the earth depend on substance Q, which is found in air for their survival. It is a colourless gas, which both marine and aquatic living organisms require for respiration and some industrial processes also require that substance Q.

i. What is the name of substance Q

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ii. Mention two methods by which the substance Q can be prepared in the laboratory.

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iii. Draw a neat, large and well labeled diagram for the set up for preparation of substance Q if potassium chlorate were to be used.

iv. Write the word equation for the laboratory preparation of substance Q using the chemical mentioned in (a)(iii) above.

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(b) Write two (2) other uses of substance Q other than respiration.

i.…….....

ii. …….....

6. (a) (i) What is the meaning of 'renewable energy sources?

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(ii) Give two examples of renewable energy sources

…… and ……

(iii) Give four examples of non-renewable energy sources:

……., ……., …… and ……

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(b) (i) State what are 'fossil liquid fuels' and give three examples of the fuels.

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(ii) Differentiate coke from coal:

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(c) Briefly describe the following gaseous fuels:

(i) Producer gas

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(ii) Water gas

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7. (a) (i) Why is it advised that fires that involve burning metals should not be extinguished by water.

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(ii) What is the appropriate fire extinguisher to use for class D fires?

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(b) State the active chemicals contained in each of the following types of fire extinguisher:

(i) Foam extinguisher

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(ii) Soda-acid extinguisher

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(iii) Dry powder extinguisher

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(iv) Wet chemical extinguisher

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8. (a) How the modern atomic theory differs from Dalton's atomic theory? Give two points

(i) ……

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(ii) ……

…….

(b) Briefly explain the change in the following properties of elements across the periodic table:

(i) Atomic radius

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(ii) Electronegativity

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(iii) Ionization energy

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(iv) Melting point

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9. (a) Is air a mixture or a compound? ……

Give four reasons

i. ……
ii. ……
iii. ……
iv. ……

(b) A form two student dipped a clean iron rod into a cold distilled water in a test tube and left it for 2 days.

i. State what will happen to the iron rod after two days

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ii. Explain the observations if the rod is replaced by a painted nail in the same test tube and left there for 2 days

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iii. Explain the observation if cold distilled water will be replaced by a mixture of hot water and oil

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SECTION C (15 MARKS)

10. (a) Draw a labeled diagram for the preparation of hydrogen using dilute hydrochloric acid and zinc granules.

(b)(i) Write formula equation for the reaction taking place in (a) above.

(ii) Give four properties of hydrogen.

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(iii)Give four uses of hydrogen

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