Candidate's Examination No ……

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
FORM TWO NATIONAL ASSESSMENT

032 **CHEMISTRY**

Time: 2:30 Hours **Thursday, 14th November 2019 a.m.**

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 black or blue ink **except** diagrams 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 hand corner of every page.
6. The following atomic masses may be used: H = 1, N = 14, O = 16, S = 32, Ca = 40

FOR EXAMINERS USE ONLY		
QUESTION NUMBER	**SCORE**	**EXAMINER' INITIALS**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		
CHECKER'S INITIALS		

SECTION A (20 MARKS)

Answer **all** questions in this section.

1. For each of the items (i) - (x), choose the correct answer from the given alternatives and write its letter in the box provided.

(i) What is the best way of keeping a clean test tube after use?
A Keeping it in water
B Keeping it on a test tube holder
C Keeping it in a basin for test tubes
D Keeping it on a test tube rack

(ii) Which one of the following **does not** involve the processes of urban water treatment and purification?
A Sedimentation.
B Distillation.
C Filtration.
D Chlorination.

(iii) Why hydrogen gas is **not** a constituent of air?
A Because of being water soluble
B Because of being denser than air
C Because of being very light
D Because of being highly flammable.

(iv) Which is the suitable alternative heat source to be used in absence of Bunsen burner?
A Torch and spirit burner
B Torch and kerosene stove.
C Kerosene stove and spirit burner
D Firewood and torch.

(v) What group and period does the element with 11 electrons belong?
A Group I and period 3.
B Group II and period 1.
C Group I and period 1.
D Group II and period 3.

(vi) What happens when substance A reacts with substance B to form a new substance C?
A Substance A and B are said to have formed a solution.
B Substance A and B are said to have undergone a physical change.
C Substance A and B are said to have undergone a chemical change.
D Substance A and B are said to have undergone a dissolution.

(vii) Which components make the fire triangle?
A Oxygen, fuel and heat.
B Oxygen, nitrogen and heat.
C Oxygen, fuel and carbon dioxide.
D Oxygen, heat and hydrogen.

(viii) Which state is involved when drying wet clothes?

A Liquid to solid. B Solid to gas.
C Gas to liquid. D Liquid to gas.

(ix) Which net charge exists in radicals?

A Zero. B Positive or negative
C Neutral D Positive and negative

(x) Why is a non-luminous flame is the most applicable flame for heating purposes?

A It is very noisy. B It has no soot.
C It is very hot. D It has air holes open.

2. (a) Match the items 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) A solvent which dissolves most substances to form solutions. (ii) A substance that has no definite shape or size. (iii) A substance that has a fixed shape and volume. (iv) A substance whose components can be separated by physical means. (v) Homogeneous mixture of two or more substances.	A Solid B Solution C Water D Sugar E Milk F Gas G Liquid H Air

Answers

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

(b) Fill in the blank spaces by using the appropriate terms.

(i) In an atom, the effect of the charged nucleons is balanced by the charge of …….

(ii) Serum is separated from blood samples by employing a technique called …….

(iii) Boiling points of substances reflect the strength of …….

(iv) Grinding chalk into a powder involves changing the state of …….

(v) The insoluble substances formed during filtration are collectively termed as …….

SECTION B (80 MARKS)

Answer **all** questions in this section.

3. (a) State one use of each of the items (i) - (v) in administering First Aid.

S/N	Item	Use
(i)	Soap	
(ii)	Bandage	
(iii)	Sterile gauze	
(iv)	Iodine tincture	
(v)	Petroleum jelly	

(b) Give one function of each of the following apparatuses in the chemistry laboratory.

(i) Spatula ……..
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(ii) Gas jar ……...
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(iii) Lie-big condenser …….
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(iv) Mortar and pestle ……..
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(v) Wire gauze ……....
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4. (a) By giving one reason, explain the following facts:

(i) During laboratory preparation of oxygen gas, little manganese dioxide is added to hydrogen peroxide.

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(ii) Fish can obtain oxygen for respiration although they spend their lives in water.

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(iii) Oxygen gas can be used for welding activities although it does not burn.

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(b) Which property enables the use of hydrogen gas in

(i) filling weather balloons?

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(ii) production of oxy-hydrogen flame?

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(c) Give two domestic uses of oxygen gas.

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5. (a) Give three chemical tests for water and show the results obtained in each.

(i) ……

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(ii) ……

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(iii) ……

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(b) (i) Differentiate water treatment from water purification.

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(ii) Why drinking water should be treated and purified? Give two reasons.

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- ……
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(iii) How can drinking water be treated or purified?

- ……
- ……
- ……

6. (a) Differentiate hypothesis from analysis.

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(b) Effective use of the four senses of observation is important before a chemist can make a conclusion. With four points, show how the senses are used as tools of observation during experimentation by giving one example for each.

(i) ……
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(ii) ……
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(iii) ……
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(iv) ……
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7. What precautions will you take in handling chemicals having the warning signs shown in the table?

S/N	Sign	Relevant Precaution
(a)		(i) …… …… (ii) …… ……
(b)		(i) …… …… (ii) …… ……
(c)		(i) …… …… (ii) …… ……
(d)		(i) …… …… (ii) …… ……
(e)		(i) …… …… (ii) …… ……

8. Briefly explain the five classes of fires based on the nature of the burning material and the extinguisher required. Give one example for each class.

(a) ……
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(b) ……
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(c) ……
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(d) ……
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(e) ……
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9. A certain gaseous compound contains 30.4% of nitrogen and 69.6% of oxygen by mass. If the molar mass of the compound is 92, calculate the molecular formula.

Stage	Nitrogen	Oxygen

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10. Briefly explain five characteristics to be considered when looking for a good fuel.

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(ii) ……
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(iii) ……
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(iv) ……
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(v) ……
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