

SMZ

ZANZIBAR EXAMINATION COUNCIL

FORM THREE ENTRANCE EXAMINATION 2014

CHEMISTRY

TIME: 2.30 HOURS

INSTRUCTION TO CANDIDATES

1. This paper consists of THREE sections A, B and C ANSWER ALL QUESTIONS IN ALL SECTION.
2. Write your centre and index number as indicated on the right corner of each page.
3. The following constants may be helpful
 $H = 1, C = 12, O = 16, Na = 23, N = 14$
4. Please tick the number of questions you have attempted.

QUESTION NUMBER	FOR EXAMINER'S USE ONLY	
	MARKS	SIGNATURE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		

THIS PAPER CONSISTS OF 12 PRINTED PAGES

SECTION A (15 MARKS)

Answer all questions in this section

1. Question (i) – (xv) are multiple choice items. Write the letter of the most correct answer in the bracket against each question.

Example

The name given to person who study chemistry is (B)

- A: Chemistry studies B: Chemist
C: Scientist D: Pharmacists

- i) The total number of protons and neutrons in the nucleus of an atom is called: ()

- A: Valency number B: Atomic number
C: Molecular number D: Mass number

- ii) The element Y is one of the elements found in the Periodic Table which are called "alkali earth metals", then element Y is probably to be found in: ()

- A: Group I B: Group II
C: Group IV D: Group VII

- iii) Why does carbon dioxide is used fire extinguishers? ()

- A: It is colourless B: It is denser than air
C: It turns limewater milky D: It does not support Burning

- iv) You can find the item which not present in first aid kits. ()

- A: Chromatography B: Antiseptic
C: Cotton wool D: Liniment

- v) A sodium atom and sodium ion have the same:- ()

- A: Number of protons B: Physical properties
C: Electronic configuration D: number of electrons

- vi) The most abundant element in the universe is ()
A: Nitrogen B: Oxygen
C: Hydrogen D: Chlorine
- vii) When substance A and B react to produce a new substance C the reactants A and B are said to ()
A: Form solution B: Mixture
C: Perform physical change D: Perform chemical change
- viii) The method of separating a mixture of two liquids by using their differences in boiling points are known as ()
A: Fractional distillation B: Distillation
C: Filtration D: Evaporation
- ix) An element X is found in period 4 and group II of the Periodic Table. If X undergoes the reaction $X \rightarrow X^{2+} + 2e^-$ the electronic configuration of X^{2+} ion is ()
A: 2: 8: 8 B: 2:8:4 C: 2:8:6 D: 2:8:2
- x) Phosphorous is found to react with 20% of certain volume of air the gas which reacts ()
A: Carbon dioxide B: Nitrogen
C: Oxygen D: Noble gases
- xi) When you want to add liquid drop by a drop during Experiment you will use ()
A: Beaker B: Test tube
C: Drop out D: Dropper
- xii) Ammonia is manufactured by ()
A: Hess Process B: Contact process
C: Haber's process D: Kuhlman process

- xiii) In laboratory sulphur is grinded by using ()
- A: Pestle and motor B: Pipette
C: Dropper D: Burette
- xiv) The substance which catches fire easily is labeled ()
- A: Explosive B: Oxidant
C: Toxic D: Flammable
- xv) Chemistry is an important subject, through its Application man have able to manufacture ()
- A: Lime stone B: Weed killer
C: Coal D: Mountain

SECTION B (25 MARKS)
Answer all questions in this section

This questions consists of TRUE/FALSE item. Write TRUE or FALSE on the space provided.

- | | |
|--|-------|
| i) Do not drink or eat in the laboratory | _____ |
| ii) Bunsen burner is used for heating | _____ |
| iii) Ice is used to treat burns | _____ |
| iv) Water can exist in all three state of matter | _____ |
| v) Brownian motion occurs in solids | _____ |
| vi) Sulphur is yellow in colour | _____ |
| vii) Water is an example of compound | _____ |
| viii) Oxygen gas present in water | _____ |
| ix) Chemical formula of washing soda is NaHCO_3 | _____ |
| x) Sprit is universal solvent | _____ |
| xi) Neutrons have positive charge | _____ |
| xii) Hydrogen is used in hardening of vegetable oil | _____ |
| xiii) Argon react with oxygen to form oxide | _____ |
| xiv) Class E fire is from burning petrol | _____ |
| xv) H_2O the valency of oxygen is 2 | _____ |

Match the item from column B with correct one in column A. Then write the letter against the corresponding item in the brackets provided

Column A

The man who study chemistry

i) Lightest element

ii) An atom which gained or lost electron

iii) It burns with golden yellow flame

iv) An apparatus for keeping test tube

v) The alkali – earth metal

vi) It is used in manufacturing of fertilizers

vii) Domestic application of combustion

viii) It is used in separating mixture of sulphur and iron

ix) Then symbol of element iron

x) The flame which do not produce soot

(B)

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Column B

A: Calcium

B: Chemist

C: Magnet

D: Non luminous

E: Ion

F: Fe

G: Hydrogen

H: Sodium

I: Test tube rack

J: Ammonia

K: Cooking

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SECTION "C"

Answer all questions in this section

4. In a certain village people were using river water direct for drinking. Could you direct them into three methods to make that water safe for drinking.

i) _____
ii) _____
iii) _____

5. Suggest one best method for separating each of the following mixture

i) Alcohol and water

ii) Sodium chloride and water

iii) Iodine and sand

iv) Sand and water

v) Rice and small pieces of stones

6. a) Give the names of the following compounds

i) FeCl_3

ii) $\text{Cu}(\text{NO}_3)_2$

- b) Name the ions present in

i) FeCl_3

ii) $\text{Cu}(\text{NO}_3)_2$

7. (a) Define the term 'Class C fire'

b) Mention two combustible materials in class C fire.

i) _____

ii) _____

iii) Why water does not used to put off class C fire.

iv) Why is air a mixture and not a compound

8. a) Draw a well labeled diagram of laboratory preparation of oxygen from decomposition of hydrogen peroxide on the presence of manganese (IV) oxide and label each type of material used.

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- b) Explain the function of manganese (IV) in this reaction

9. i) What is a covalent bond?

- ii) Draw an electronic diagram to show the covalent bonding between hydrogen and chlorine in a hydrogen chloride gas molecule.

- iii) Why covalent compound do not conduct electricity?

10. a) Complete the following table

Element	A	B	C	D
Atomic number	18		12	17
Number of protons				
Number of neutrons	8	6	24	35
Mass number				
Electronic configuration		2:8:1		

b) i) Which elements are metals?

ii) What are the valances of A and D

11. a) What is shock

b) What would you have done to a victim who has got shock if:-

i) The victim is bleeding

ii) The victim vomits

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iii) The victim wore tight clothes

iv) The victim's condition is bad

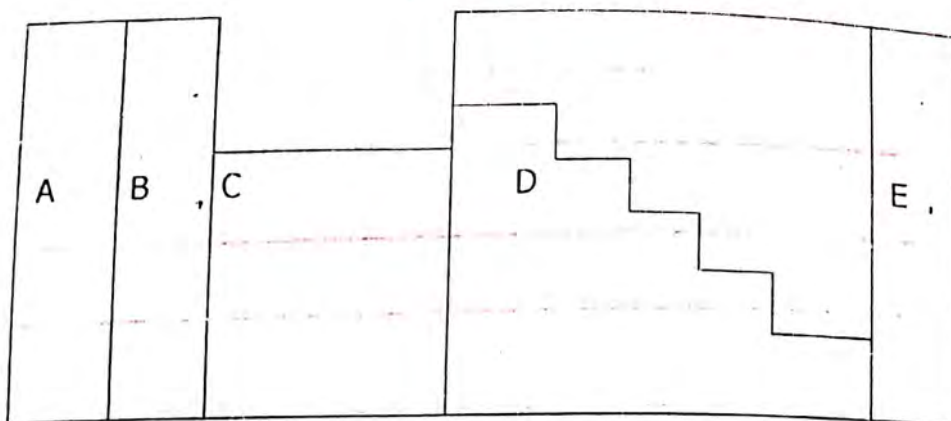
12. a) Define the following terms

i) Molecular formula

ii) Empirical formula

- 7) A compound of sulphur and oxygen is 59.9% by mass. Calculate the empirical formula of the compound.

13. The diagram below represent the Periodic Table. Study the diagram below careful and then answer the questions that follows.



a) Name the types of elements found in:-

- i) A _____
- ii) B _____
- iii) C _____
- iv) D _____
- v) E _____

b) Where you will keep the element hydrogen
