Candidate's Examination Number ……

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
FORM TWO SECONDARY EDUCATION EXAMINATION, 2009

0032 **CHEMISTRY**

Time: 2½ HOURS

INSTRUCTIONS

1. This paper consists of sections A, B and C.
2. Answer **ALL** questions.
3. Write your examination number at the top right corner of every page.
4. **ALL** writing must be in black or blue ink **EXCEPT** diagrams which must be in pencil.
5. Cellphones and calculators are not allowed in the examination room.
6. The following atomic masses may be used: $H = 1$, $O = 16$, $C = 12$, $Na = 23$, $S = 32$, $Ca = 40$

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

This paper consists of 8 printed pages.

SECTION A (10 MARKS)

1. Questions (i) - (x) are multiple choice items. Select the best answer in each case and write its letter (A, B, C, or D) in the box provided.

(i) The scientific method used to confirm a hypothesis is:
A. Observation
B. Data analysis
C. Experimentation
D. Conclusion

(ii) A substance that turns anhydrous cobalt(II) chloride from blue to pink is:
A. Ethanol
B. Water
C. Nitric acid
D. Ammonia

(iii) The valency of an element with atomic number 8 is:
A. 1
B. 2
C. 3
D. 4

(iv) The method used to separate a mixture of salt and sand is:
A. Sublimation
B. Filtration
C. Evaporation
D. Dissolving and filtration

(v) A Bunsen burner produces a blue flame when:
A. Air holes are closed
B. Air holes are fully open
C. Gas supply is low
D. Flame is sooty

(vi) Which of the following is a non-metal?
A. Sodium
B. Magnesium
C. Sulphur
D. Potassium

(vii) The bond formed between carbon and oxygen in carbon dioxide is:
A. Ionic
B. Covalent

C. Metallic
D. Electrovalent

(viii) A substance that catches fire easily is classified as:
A. Corrosive
B. Toxic
C. Flammable
D. Irritant

(ix) The electronic configuration of chlorine (atomic number 17) is:
A. 2:8:7
B. 2:8:6
C. 2:7:8
D. 2:8:8

(x) The gas that forms a white precipitate with lime water is:
A. Oxygen
B. Hydrogen
C. Carbon dioxide
D. Nitrogen

2. Match each item in List A with a correct response in List B by writing its letter below the number of the corresponding item in the table provided.

LIST A	LIST B
(i) Gas used in welding	A. Nitrogen
(ii) Prevents rusting by coating iron	B. Zinc
(iii) Separates liquids with different boiling points	C. Fractional distillation
(iv) Element with atomic number 12	D. Magnesium
(v) Turns brown in iodine test	E. Starch
(vi) Apparatus for heating solids	F. Crucible
(vii) Liquid used in thermometers	G. Mercury
(viii) Method to obtain pure water	H. Distillation
(ix) Gas that does not support combustion	I. Carbon dioxide
(x) Supports combustion	J. Oxygen

Answers:

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

SECTION B (70 MARKS)

Answer ALL questions from this section. Each question carries 7 marks.

3. (a) Define the term "atom".

.....

.....

(b) Name three subatomic particles found in an atom.

.....

.....

(c) State the charge and location of each particle named in (b).

.....

.....

4. (a) What is meant by the term "ionic bond"?

.....

.....

(b) Draw diagrams to show the electron arrangement in:

(i) A fluorine atom (atomic number 9)

(ii) A fluoride ion

.....

.....

(c) State the type of bond formed between magnesium and oxygen.

.....

.....

5. (a) Define the term "solution".

.....

.....

(b) List three differences between a solution and a suspension.

.....

.....

(c) Name one method to separate a solution of sugar and water.

.....

6. (a) What is meant by the term "fire triangle"?

.....

.....

(b) State three components of the fire triangle.

.....

.....

(c) Name one method to extinguish a fire caused by burning paper.

.....

.....

7. (a) Define the term "valency".

.....

.....

(b) Calculate the oxidation number of the underlined elements:

(i) $Na_2\underline{S}O_4$

(ii) $H\underline{Cl}O_4$

.....

.....

(c) State one example of a reduction reaction in daily life.

.....

.....

8. (a) What is meant by the term "first aid"?

.....

.....

(b) List three items found in a first aid kit in a chemistry laboratory.

.....

.....

(c) State one use of a splint in first aid.

9. (a) Define the term "oxygen".

.....

.....

(b) Describe a laboratory test for oxygen gas.

.....

.....

(c) Name one use of oxygen in everyday life.

.....

.....

10. (a) What is meant by the term "non-renewable resource"?

.....

.....

(b) Name two non-renewable fuels used in Tanzania.

.....

.....

(c) State one environmental impact of using non-renewable fuels

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....