Candidate's Examination Number ……

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
FORM TWO SECONDARY EDUCATION EXAMINATION, 2008

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 process of collecting data through the senses is called:
A. Experimentation
B. Hypothesis
C. Observation
D. Conclusion

(ii) A liquid that forms a green solution with iron(II) sulphate is likely to be:
A. Water
B. Ammonia
C. Hydrochloric acid
D. Ethanol

(iii) The chemical symbol for potassium is:
A. P
B. K
C. Po
D. Pt

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

(v) A non-luminous flame is produced when:
A. Air holes are closed
B. Gas supply is high
C. Air holes are fully open
D. Flame is yellow

(vi) Which of the following elements is a noble gas?
A. Neon
B. Nitrogen
C. Sodium
D. Sulphur

(vii) The bond in a water molecule is:
A. Ionic
B. Covalent

C. Metallic
D. Electrovalent

(viii) A substance that causes severe burns on skin is:
A. Flammable
B. Corrosive
C. Toxic
D. Irritant

(ix) The electronic configuration of aluminium (atomic number 13) is:
A. 2:8:3
B. 2:8:2
C. 2:7:4
D. 2:8:4

(x) The gas used in balloons is:
A. Oxygen
B. Hydrogen
C. Helium
D. Carbon dioxide

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 that produces a pop sound	A. Oxygen
(ii) Coating iron with paint	B. Rust prevention
(iii) Separates solids from liquids	C. Filtration
(iv) Element with atomic number 16	D. Sulphur
(v) Forms blue solution with copper(II) sulphate	E. Water
(vi) Apparatus for precise liquid dispensing	F. Pipette
(vii) Liquid used in batteries	G. Sulphuric acid
(viii) Method to obtain sugar from solution	H. Evaporation
(ix) Gas used in fire extinguishers	I. Carbon dioxide
(x) Element in group I, period 3	J. Sodium

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 "molecule".

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(b) Name three types of chemical bonds.

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(c) Give one example of a compound formed by each bond type in (b).

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

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

(i) A nitrogen atom (atomic number 7)

(ii) A nitrogen molecule (N_2)

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(c) State the type of bond formed between hydrogen and oxygen in water.

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

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(b) List three properties of a suspension.

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(c) Name one method to separate mud from muddy water.

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

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(b) Name three types of fire extinguishers.

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(c) State one precaution when using a water extinguisher.

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

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(b) Calculate the number of neutrons in:

(i) Carbon-12 (atomic number 6)

(ii) Carbon-14 (atomic number 6)

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(c) State one use of isotopes in science.

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8. (a) What is meant by the term "hazard symbol"?

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(b) List three hazard symbols found in a chemistry laboratory.

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(c) State the meaning of one symbol listed in (b).

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

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(b) Describe a laboratory test for hydrogen gas.

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(c) Name one industrial use of hydrogen.

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10. (a) What is meant by the term "water hardness"?

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(b) Name two types of water hardness.

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(c) State one method to remove temporary hardness from water.

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