

**INTERSECONDARY SCHOOLS EXAMINATION SERIES
ISESE****FORM TWO OPENING TEST JULY
CHEMISTRY****032****TIME 2:30 HRS****Year 2026****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. Section A and C carry **fifteen (15)** marks each and section B carries **seventy (70)** marks.
4. All writing must be in **black** or **blue** ink **except** diagrams which must be in pencil.
5. Communication devices and any unauthorized materials are **not** allowed in the assessment room.
6. Write your **name** at every page.

FOR EXAMINER'S USE ONLY		
QUESTION NUMBER	SCORE	EXAMINER'S INITIAL
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

SECTION A (15 MARKS)

Answer **all** questions in this section.

1. Items (i) – (x) consists of multiple-choice questions, choose the letter of the most correct response and write it against the number in the box provided below

i. A Form Two student is learning how to stay safe in the chemistry laboratory. Which of the following best explains why every laboratory should be equipped with working fire extinguishers?

- A) To store chemicals safely
- B) To cool hot apparatus
- C) To put out fires caused by flammable substances or electrical faults
- D) To clean laboratory benches after experiments

ii. A student reads that if a person's clothes catch fire, they should be covered with a fire blanket. What property of the fire blanket makes it suitable for this purpose?

- A) It is made of woven cotton that absorbs water
- B) It is made of flame-resistant material that smothers the fire by cutting off oxygen
- C) It is made of plastic that melts and extinguishes flames
- D) It is made of paper that burns slowly

iii. Using the particle theory of matter, which statement correctly explains why a liquid can be poured easily?

- A) Particles in a liquid are closely packed and cannot move
- B) Particles in a liquid are far apart and move very fast
- C) Particles in a liquid can slide past one another, allowing the liquid to flow
- D) Particles in a liquid are fixed in position but vibrate

iv. A chemist classifies rock salt as a mixture and table salt as a compound. What is the most likely reason for this classification?

- A) Rock salt contains only one type of atom, while table salt contains two
- B) Rock salt is a mixture of sodium chloride and impurities, while table salt is pure sodium chloride
- C) Rock salt dissolves in water but table salt does not
- D) Rock salt is produced in a chemical reaction, but table salt is not

v. In the textile industry, chemistry is applied to improve fabric properties. Which of the following is a chemical process used in textile manufacturing and its benefit?

- A) Bleaching – removes natural color to prepare fabric for dyeing
- B) Grinding – reduces fabric thickness
- C) Freezing – increases fabric elasticity
- D) Magnetizing – removes static electricity

vi. A student mixes silver nitrate solution with sodium chloride solution and observes a white precipitate. Which formula represents the precipitate formed?

- A) AgNO_3
- B) NaCl
- C) AgCl
- D) NaNO_3

vii. According to the modern periodic law and Mendeleev's periodic law, which of the following is a similarity between the two?

- A) Both arranged elements by increasing atomic number
- B) Both grouped elements with similar chemical properties together
- C) Both left no gaps for undiscovered elements
- D) Both used atomic mass as the only basis for arrangement

viii. A student is asked to write the chemical formula for the compound formed between aluminium and bromine. Which of the following is correct?

- A) AlBr
- B) AlBr_2
- C) Al_2Br
- D) AlBr_3

ix. Which statement correctly explains why a gas completely fills any container it is placed in, using the particle theory?

- A) Gas particles are fixed together and move slowly
- B) Gas particles are far apart and move randomly at high speed, spreading throughout the container
- C) Gas particles are attracted strongly to each other
- D) Gas particles are larger than the container's spaces

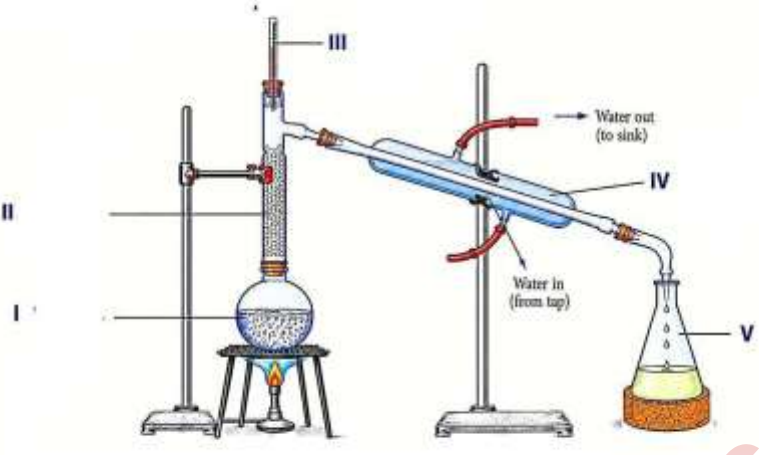
x. A student wants to separate the mixture formed after mixing silver nitrate and sodium chloride solutions. The white precipitate is suspended in the liquid. Which method should they use?

- A) Decantation
- B) Filtration
- C) Distillation
- D) Chromatography

ANSWER

i	ii	iii	iv	v	vi	vii	viii	ix	x

2. Match the labels (I–V) from the diagram in **COLUMN A** with their correct functions in **COLUMN B** by writing the letter of the correct answer in the space provided

COLUMN A	COLUMN B
	A. Cools hot vapors back into a liquid state using cold water. B. Collects the pure liquid (distillate) once it has been condensed. C. Monitors the boiling point of the vapor to identify the substance being collected. D. Holds the mixture of liquids to be heated and separated. E. Provides a large surface area for repeated evaporation and condensation to improve separation. F. Provides the heat energy required to evaporate the liquid mixture.

ANSWER

I	II	III	IV	V

SECTION B (70 MARKS)Answer **all** questions in this section

3. (a) You are mentoring a new chemistry graduate who aspires to become a successful research chemist. They need to develop key competences to excel in laboratory work, problem solving, and scientific communication. Identify and explain six fundamental skills a chemist must acquire to be successful in their career.

- i. _____
- _____
- ii. _____
- _____
- iii. _____
- _____
- iv. _____
- _____
- v. _____
- _____
- vi. _____
- _____

b) Investigate how chemistry is applied in the textile industry. Identify two chemical processes used and their benefits.

- i. _____
- _____
- ii. _____
- _____

4. Give reasons to support each of the following statements:

a) Vibration should be kept equipped with working fire extinguishers.

b) A laboratory should have large windows.

c) Concentrated chemicals should not be poured into the sinks.

5. A form one student reads a statement from a certain book that if his clothes catch fire cover him with a fire blanket.

a) What material composes the fire blankets?

b) Why a fire blanket is to be used in that case.

c) Briefly explain how it is used to put off the fire.

- i.

- ii.

- iii.

- iv.

6. Using the idea of particles explain why:

a) It is easy to pour a liquid.

b) A gas will completely fill any container.

c) A solid expands when it is heated.

7. A chemist categorized the following items as elements, mixtures and compounds. What could be the reason behind the assigning:

a) Rock salt as mixture and table salt as a compound.

b) Muddy water as a mixture and pure water as a compound.

c) Charcoal as an element and sugar as a compound.

8. Atoms contain three types of particles:

a) State where the protons and neutrons are in an atom.

b) State which type of particle in the atom orbits the nucleus.

c) State which one of the particles has a positive charge

d) State which two particles have approximately the same mass

i.

ii.

9. a) The modern periodic law is based on modification of Mendeleev periodic law.

Explain two ways in which the two laws are similar and three ways in which the two laws differ from each other.

Similarities

i.

ii.

Differences

i.

ii.

iii.

b) Write down the chemical formula of each of the compounds formed by combining between the following elements.

i) Potassium and Chlorine

ii) Calcium and Sulphur

iii) Lithium and Fluorine

iv) Aluminium and Nitrogen

v) Aluminium and Bromine

SECTION C (15 marks)

Answer question number **ten (10)** in this section

10. A student accidentally mixed silver nitrate solution with a solution made by dissolving common salt. He observed a white precipitate forming after mixing.

(i) Write the balanced equation.

(ii) Write the ionic equation for the reaction.

(iii) Identify what is the formula of the precipitate.

(iv) How can you separate the mixture?

(v) Describe the physical appearance of the mixture before and after the reaction took place.



INTERSECONDARY SCHOOLS EXAMINATION SERIES
ISESE TIME TABLE
FORM TWO PRE NECTA SERIES 01
13th July – 18th July 2026

DATE	SUBJECT(S)
13 th July	HISTORY + B.STUDIES
14 th July	BIOLOGY + ENGLISH
15 th July	CHEMISTRY + HTM
16 th July	PHYSICS + KISWAHILI
17 th July	MATHEMATICS + GEOGRAPHY
18 th July	COMPUTER SCIENCE

GHARAMA

*** SOMO MOJA KWA KIDATO KIMOJA = **20,000/=** KWA MUHULA MZIMA

*** FULL SET KWA KIDATO KIMOJA (KWA MASOMO 11 TU) = **150,000/=** KWA MUHULA MZIMA

ZINGATIA :-

*** GHARAMA ZA MITIHANI HUPANDA KADRI PRE-NECTA SERIES ZITAKAVYOKUWA ZINAENDELEA KUFANYIKA HIVYO LIPIA MAPEMA ILI KUEPUKA USUMBUFU

*** PRE-NECTA SERIES ZITAKUWA ZAIDI YA **10**

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