

Name:

Signature

545/1
CHEMISTRY
Paper 1
2026
2 hours



SET 5

For Scorers' Use Only

Total Weighted Score		
Initials		

Uganda Certificate of Education

CHEMISTRY

Paper 1

2 hours

INSTRUCTIONS TO CANDIDATES:

This paper consists of two Sections; A and B.

It has six examination items.

Section A has two compulsory items.

Section B has two Parts; I and II. Answer one item from each part.

Answer four items in all.

Answers to Section A must be written in the spaces provided while those of section B must be written on the answer booklet(s) provided.

Any additional item(s) answered will not be scored.

Use where necessary;

Ca = 40; Mg=24; C = 12, O = 16; 1 mole of a gas occupies 22.4 dm³ at s.t.p.

Item No.	Basic Code	Weighted Score	Scores' Initials
1	T		
	D		
	E		
2	C		
	X		
	I		
3/4	P		
	S		
	B		
5/6	N		
	M		
	Be		
Total Weighted Score			

SECTION A

Answer all items in this section

Item 1

While preparing a vegetable stew at home, Jane usually adds only salt. During a visit to a local catering event, she noticed that the stew there contained garlic, ginger, tomatoes, and salt, as shown in Figure 46.



Fig 1. Some of the ingredients used in preparing stew

Jane was impressed by the deliciousness and wants to understand more about the ingredients used by professional cooks and their roles in food.

Task:

- (a) State the category and the function of each ingredient.

- (b) Describe the side effect(s) associated with the ingredients.

(c) State the;

i. similarities of the ingredients.

ii. differences between the other ingredients and common salt.

Item 2

At an industrial materials manufacturing company, engineers are evaluating different elements for use in making metal parts, electronic components, and heat-resistant materials. During a technical meeting, a chart showing the melting points of some Period 3 elements was presented to guide decisions on which materials are suitable for high-temperature industrial processes.

The data displayed is shown below:

Chart of melting points of some Period 3 elements

Elements	Na	Mg	Al	Si	P
Atomic number	11	12	13	14	15
Melting points (°C)	98	650	660	1414	44.1

Some company staff members are confused about the nature of the elements and how to interpret the melting point trend when selecting materials for industrial use.

You have been consulted, as a student of Chemistry on industrial attachment, to help clarify the situation.

Task:

As a chemistry learner, help the class members;

(a) to explain;

(i) Explain the nature and classification of the elements listed.

(ii) Variation in the melting points of the elements and what it implies for industrial material selection.

(b) Suggest one industrial application for any two of the elements based on their melting points.

(c) Advise the impact of using the element in (b) above.

SECTION B

PART I

*Answer **one** item in this section*

Item 3

In Uganda, aluminium products are widely used in everyday life, especially in the manufacture of utensils, roofing sheets and electrical components. To ensure a reliable supply of aluminium, the government is considering establishing an aluminium production plant in a selected area. However, the local residents need to be sensitised about the industrial processes involved, the social benefits, the possible side effects, and the ways in which these effects can be controlled, figure shows aluminium production plant. Your head teacher has been identified to lead the sensitisation of the community.

Task:

As a learner of Chemistry, prepare a written presentation that the head teacher will use to sensitize the residents.

Item 4

In Lugala village, residents are struggling with fuel shortages and pollution caused by the use of traditional energy sources such as firewood and charcoal. To address this, a biogas production facility has been proposed to provide a more reliable and cleaner source of energy for cooking and lighting.

While the project promises social and economic benefits, some residents are concerned about potential health risks and environmental effects arising from the plant's operation.

Fig 2. A biogas production plant

You have been invited, as a chemistry student, to guide the community on how the plant works, its benefits, and any precautions needed to minimize negative impacts.

Task:

As a chemistry learner, prepare a brief write-up advising the community on:

PART II

Answer one item in this section

Item 5

Several timber-processing factories in Uganda are facing challenges due to the rapid depletion of forest resources caused by illegal logging, agricultural expansion, and urban development. Although the government has introduced policies promoting sustainable forest management, factory managers report that these efforts have had little impact because many workers and community members do not fully understand the chemical and environmental importance of forests.



Fig 3. Illegal logging and urban development

As part of a corporate social responsibility program, one of the timber companies has organized a sensitisation workshop for its employees and nearby residents to promote responsible forest use and conservation.

You have been invited, as a learner of Chemistry on industrial training, to contribute to the workshop.

Task:

Use your chemistry knowledge to create awareness to the people.

Item 6

In Eastern Uganda, several areas are rich in minerals and rock deposits. However, rapid population growth and increased mining activities have led to significant environmental degradation.

To raise awareness, the government plans to use local media outlets to educate citizens about the responsible use of these resources. Your school has been selected to lead a district-level environmental awareness campaign, and you have been invited to speak on a community radio program, relying on your chemistry knowledge about minerals and their effects on the environment.

Task:

As a chemistry student, write down the key points you would convey on the radio program:

END