Candidate's Name: .....

Signature: .....

Random No.						Personal No.		

(Do not write your School/Centre Name or Number anywhere on this booklet.)

545/1
CHEMISTRY
Paper 1
Oct./Nov. 2026
2 hours

For Scorers' Use Only

Total Weighted Score		
Initials		

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

INSTRUCTIONS TO CANDIDATES:

This examination paper consists of **two** *Sections;* **A** *and* **B**. *It has* **six** *items.*

Section **A** *has two* **compulsory** *items. Responses to Section* **A** **must** *be written in the spaces provided.*

Section **B** *has two parts;* **I** *and* **II**. *Respond to only* **one** *item from* **each** *part.*

Responses to items in Section **B** **must** *be written in the answer booklet(s) provided.*

Responses to each item should start on a fresh page for Section **B**.

Respond to **four** *items* **in all**.

Any additional item(s) responded to will **not** *be scored.*

For Scorers' Use Only

Item No.	Basis Code	Weighted Score	Scorers' Initials
1	LI_1		
	LU_1		
	LA_1		
2	DI_2		
	DU_2		
	DA_2		
_____(3/4)	$EI_{3/4}$		
	$EU_{3/4}$		
	$EA_{3/4}$		
_____(5/6)	$NI_{5/6}$		
	$NU_{5/6}$		
	$NA_{5/6}$		
Total Weighted Score			

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Turn Over

SECTION A

Respond to **both** *items in this section.*

Item 1

Maria and her friend Gladys are students in senior one in a boarding school. They both have the same skills in washing clothes. On one weekend, they washed their uniforms to a fairly similar extent, with the same quantity of water from a borehole. Maria used cleaning agent **W** whereas Gladys used **X**. After washing, Maria realised that she had used more cleaning agent than what Gladys had used for the same number of uniforms. This left Maria wondering and as a result, she wants to know more about the cleaning agents.

Tasks:

(a) Categorise the cleaning agents **W** and **X**, giving a reason for your answer.

For Scorer's Use Only

Basis Code	LI_1
Score	

(b) Explain why Maria used more cleaning agent than Gladys.

(c) Explain the challenges associated with using cleaning agent **X** and their mitigations.

For Scorer's Use Only

Basis Code	LU_1
Score	

(d) Compare and contrast the products **X** and **W**.

For Scorer's Use Only

Basis Code	LA_1
Score	

Item 2

John rears cattle which produce a lot of cow dung on his farm. Overtime, it has accumulated and attracts flies. He has been advised to make biogas from the cow dung using a biogas digester.

The main compound in the biogas used as fuel for cooking and lighting is methane. Methane burns according to the following equation.

$$CH_{4\,(g)} + 2\,O_{2\,(g)} \longrightarrow CO_{2\,(g)} + 2\,H_2O_{\,(l)}$$

For effective use of methane, it should be measured in kilogrammes.

Before setting up the biogas digester, John would like to know about methane and the heat generated when 1 kg of methane is burnt.
You have been contacted by John for help.

Tasks:

(a) Classify the compound that John was advised to produce and give a reason for your answer.

For Scorer's Use Only

Basis Code	DI_2
Score	

(b) Explain the other properties of the compound to be produced by John.

(c) Determine the amount of heat produced when 1 kg of the compound is burnt during cooking.
(C = 12, H = 1, Heat of combustion of methane = -885.4 kJ/mol)

For Scorer's Use Only

Basis Code	DU_2
Score	

(d) Suggest the risks of using the compound as a fuel and how they can be mitigated.

For Scorer's Use Only

Basis Code	DA_2
Score	

SECTION B

Part I

Respond to only **one** *item in this part.*
Responses should be written in the answer booklet(s) provided.

Item 3

Production of textiles and treatment of water are some of the industrial processes that use large amounts of sodium hydroxide as a raw material. Hence its continuous supply is important. The production of sodium hydroxide requires sodium chloride as a raw material.

An investor has proposed setting up a sodium hydroxide manufacturing factory in an area where sodium chloride is abundant. The community members wish to know about the production process, its socio-economic benefits and how any side effects can be mitigated.

You are required to prepare a presentation to the community members.

Task:
Write down your presentation.

Item 4

Climate change is a major challenge that has far reaching effects on humanity. One way of mitigating climate change is to reduce carbon emissions into the atmosphere. This can be done by reducing over dependence on carbon-based fuels for energy.

In an attempt to provide alternative energy source, the authorities are planning to extend electricity distribution to rural areas. However, this necessitates importing

pure aluminium for making aluminium cables. Imported pure aluminium is xpensive but the cost can be greatly reduced if manufactured locally. Fortunately, ɔme of the areas have aluminium deposits that can be extracted and purified.

You have been chosen to make a presentation on the possibility of setting up an ndustry that will extract and produce pure aluminium locally. Your presentation hould include; the production process, socio-economic benefits, side effects of the ndustrial process and their mitigations.

Task:
Write down the presentation.

Part II

Respond to only **one** *item in this part.*
Responses should be written in the answer booklet(s) provided.

tem 5

A city is experiencing many environment-related challenges, which affect the ustainable use of its natural resources.

n response to the challenges, the Environmental Management Authority (EMA) is creating awareness about sustainable use of resources for safe and clean environment under the theme: **My Environment, My Responsibility**. EMA has asked students to participate in the awareness by writing articles to be included in the EMA magazine. The article should include; category of resources, its composition, impact of human ctivity on the resources and benefits of the resources.

Task:
Write the article to be submitted to EMA.

tem 6

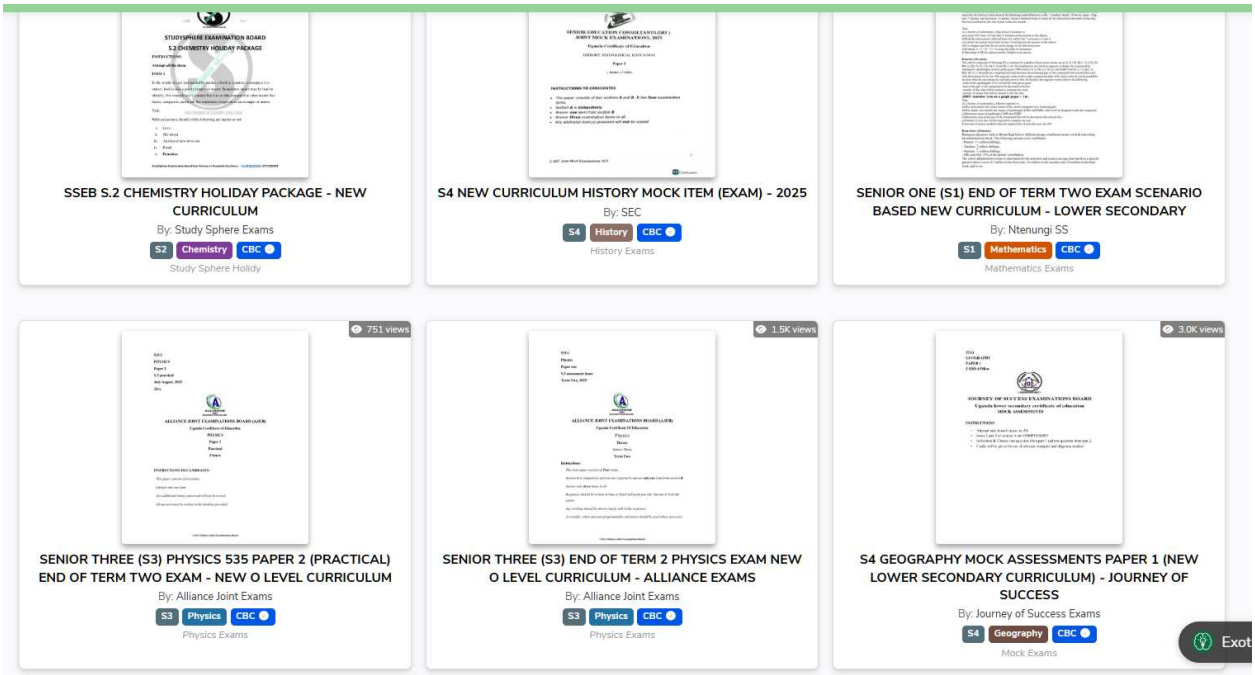
Most urban dwellers in Uganda depend on charcoal as a fuel for cooking. This has negatively affected the forest cover in the country. In one of the sub counties, National Forest Authority (NFA) has organised a sensitisation workshop. The aim of the workshop is to enlighten the public about conservation of forests, dangers of harcoal burning, social benefits of the forests and alternative sources of fuel.

You have been chosen to represent the youth of the area to demonstrate their level of awareness.

Task:
Compose the sensitisation message.

END

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