Candidate's Name: ……

Signature …….

Random Num						Personal Number		

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Total weighted score		
Initials		

545/1
CHEMISTRY
Paper 1
July/August, 2026
2 hrs

UGANDA CERTIFICATE OF EDUCATION
2 hours
CHEMISTRY
MOCK PAPER I Set 1
2 HOURS

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Item No.	Basis code	Weighted score	Scorer's Initials
1	T		
	D		
	E		
2	C		
	X		
	I		
(3/4)	P		
	S		
	B		
(5/6)	N		
	M		
	Be		
Total Weighted score			

INSTRUCTIONS TO CANDIDATES:

The paper consists of **two** sections; **A** and **B**.
It has **six** examination 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 section **B** must be written in the answer booklet(s) provided.

Respond to **four** items in all

Responses to each item in section **B** should start on a fresh page Any additional item(s) responded to will **not** be scored.

SECTION A

Responses to all items in this section must be written in the spaces provided

Item 1:

Sarah's children usually go out to play. Her son's clothes always get stained with grease, while her daughter's clothes always get stained with beans and other starchy foods. A friend advised Sarah to wash the clothes using either cleansing agent **W or Y**. She decided to use **W** for the first time and noticed that all the stains were effectively removed unlike when she used **Y** during her second time of washing. She is now wondering why substance **W** works so well and she asked for a scientific explanation from you.

Task

As a chemistry learner,

a) identify **W** and **Y**.

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b) explain to Sarah,

i. why substance **W** effectively cleaned her daughter's fabric.

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ii. how substance **W** removed the grease stains from the son's fabric.

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c) Describe one environmental side effect associated with the use of substance **W**.

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d) Compare **W** and **Y** in terms of ***similarity*** and ***difference.***

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Item 2

An industrial investor is planning to establish a facility to separate specific organic compounds from their sample of mixture. To optimize the separation process and ensure operational efficiency, the investor must first analyze some of their properties among which is the relationship between the number of carbon atoms of these organic compounds and their boiling points. Furthermore, he is interested to know the suitability of any of these organic compounds to their applications in life. As part of social responsibility mandate, the investor is committed to educating the public on the health implications associated with the utilization of these refined products. The data below represents the first six members of the homologous series extracted during the process:

Organic compound	Number of carbon atoms	Boiling points (°C)
Methane	1	-161
Ethane	2	-89
Propane	3	-42
Butane	4	-1
Pentane	5	36
Hexane	6	69

Fig. 1

Task: As a Chemistry student,

(a) Explain the homologous series to which these compounds belong.

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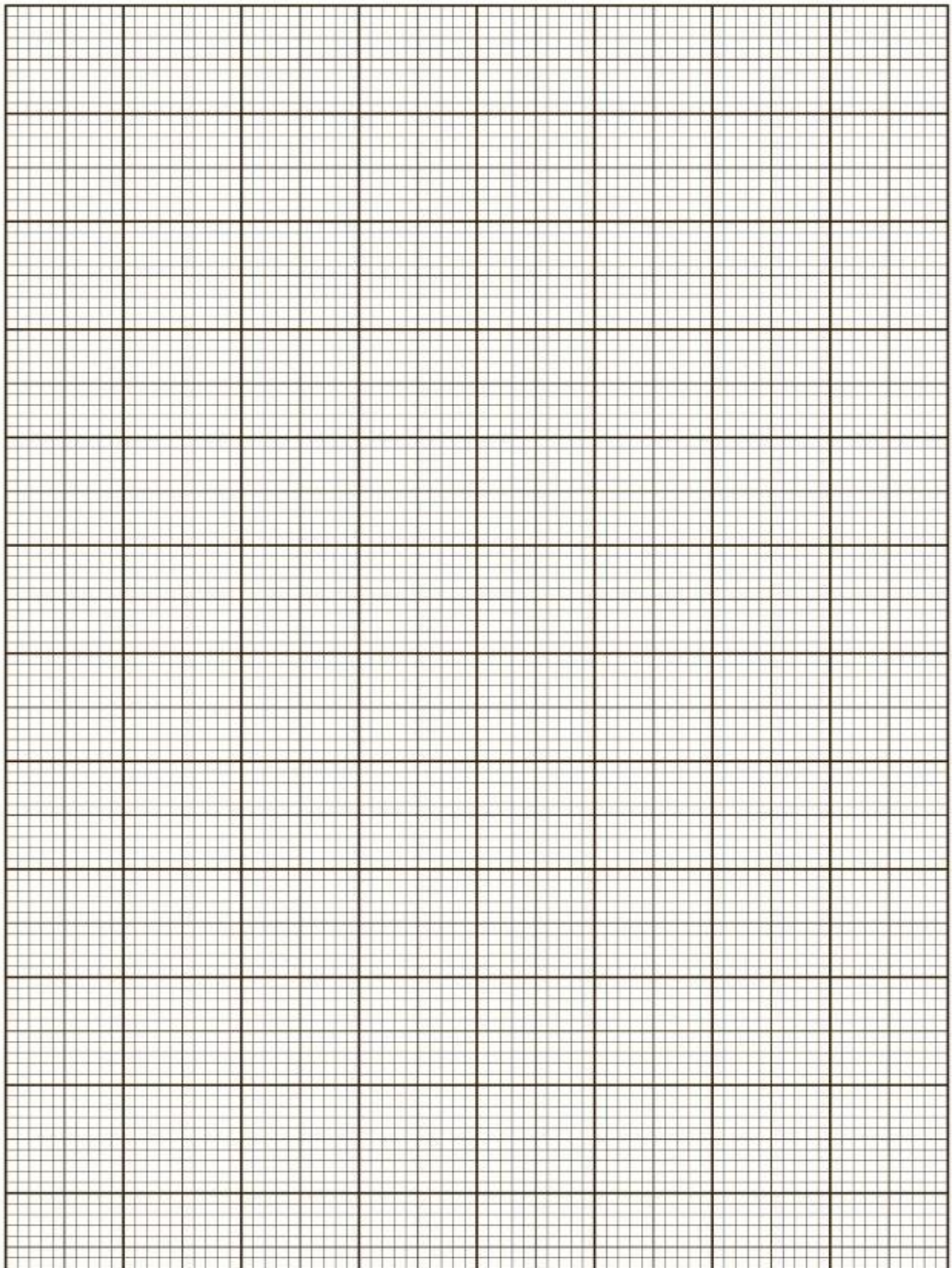
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(b) Plot a graph showing the relationship between the number of carbon atoms and their boiling points hence deduce the relationship between the number of carbon atoms and the boiling points of these compounds.

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(c) Explain the properties of the first organic compound in the table to its applications in life.

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(d) Explain the health impact to man associated with the widespread use of these compounds.

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SECTION B

PART I:

Attempt any one item from this part

Item 3

Due to large quantities of nitrogen gas needed on market for the large scale production of nitric acid, fertilizers and industrial chemicals, Jinja Municipal Council officials have cleared an investor to set up a nitrogen manufacturing plant. However, the locals are concerned about its impact and are seeking assurance on how they will benefit from its operations. The municipal officials have organized a workshop to educate the locals. You have been invited to attend.



Fig 2

Task

As a chemistry student, make a write up you will use during the presentation.

Item 4.

Currently Uganda is faced with a challenge of Ebola epidemic. One of the preventive measures put by the government to stop the spread of Ebola virus requires washing hands regularly with soap using clean water or cleaning hands with ethanol-based hand sanitizers which must contain at least 60% of ethanol. This has prompted the government to clear an investor to set up an ethanol production facility in one district of Uganda to increase on the quantity of ethanol needed for making hand sanitizers. However, the locals are concerned about its environmental impact resulting from the process of production and how they will benefit from the facility. You have been invited to address the locals in one of the sensitization workshops conducted at the sub county hall.





Fig.3

Task. Write a write up presentation you will use during the presentation.

Item 5

The industrial sector's contribution to the national economy and job creation is undeniable. However, this economic progress has often come at the expense of environment as observed by its significant impact on nearby water sources .Many of these industries generate significant heat energy which end up being absorbed by waste water. The local residents have raised concerns regarding this effect which has prompted environmental officials to intervene. They have organized a workshops to guide the investors and the general public on sustainable practices and the critical need for resource conservation. You have been invited to attend and make a presentation.



Fig. 4

Task. Prepare a write up message you will deliver.

Item 6:

For over a decade, the inhabitants of Kokwomurya village situated on the steep high altitude ridges of Kapchorwa have actively engaged extracting their **igneous rocky areas** for minerals which has severely affected the quality of atmosphere in the region. To address these urgent environmental concerns, local authorities have organized community workshops to create awareness and find sustainable solution.





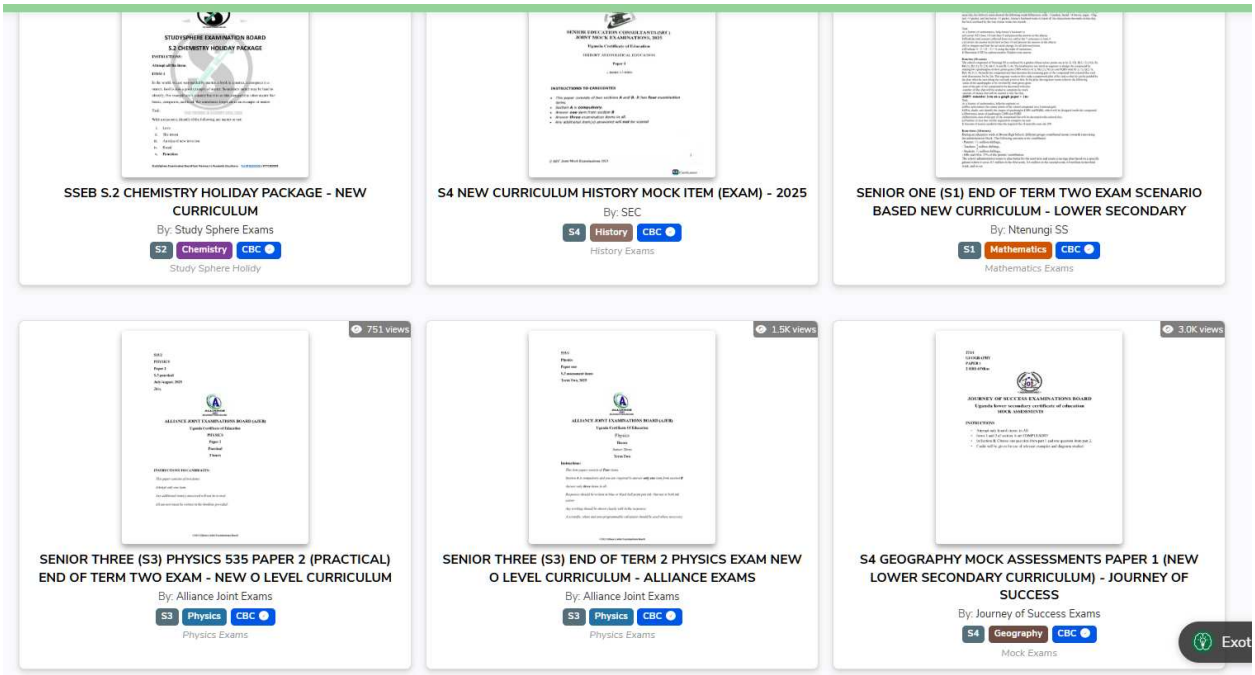
Fig. 5

Task:

As a learner of chemistry, prepare a write up message you will use during presentation.

END

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