

Candidate's Name: .....

Signature: .....

545/1  
CHEMISTRY  
Paper 1  
2024  
2 hours

**CHEMISTRY DEPARTMENT EXAMINATIONS BOARD**

**Uganda Certificate of Education**

**CHEMISTRY**

**Paper 1**

2 hours

**INSTRUCTIONS TO CANDIDATES:**

*This paper has **six** examination items which are divided into **two** sections; **A** and **B**.*

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

*Section **B** has **two parts; I and II**. Answer **one** item from **each** part.  
Answers to section **B** **must** be written in the answer booklet(s) provided.*

*Answer **four** items in all.*

*Any additional item answered will **not** be scored.*

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1	2	3	4	5	6

## SECTION A

Answer **all** items from this section in the spaces provided.

### Item 1

Musa is increasingly losing customers who are always complaining that his hand made fruit juices get spoilt easily and as well as constantly losing their natural colours.



In order to cater for the customers' complaints, Musa wants to add some ingredients to his fruit juices but he lacks knowledge of what exact ingredient products he should use.

#### Task:

As a chemistry learner;

- (a) (i) Explain the categories of ingredient products he should use. (02 scores)

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- (ii) Explain to Musa how the ingredient products work. (02 scores)

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- (b) Give the dangers associated with the long term use of the ingredient products. (05 scores)

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## Item 2

The government wants to construct a new strong dam in Isimba region along River Nile in order to increase on hydroelectric power production. It has hired a Chinese dam construction company to execute this exercise using different building materials on market that have minimal impact to the environment.



The chief engineer of the company has promised the government that he will select suitable materials to be used basing on their qualities and properties.

### Task:

Use your chemistry knowledge to;

(a) Explain

(i) Categories of materials to be used.

(03 scores)

(ii) The suitability of the materials.

(04 scores)

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- (b) Advise the chief engineer about the impacts of the materials to the environment. (02 scores)
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## SECTION B

### Part I

Answer **one** item from this part in the answer booklet(s) provided.

#### Item 3

Rocky ores in Kangu village have been discovered to be rich in aluminium, a substance used to make electricity overhead cables. The government is seeking to increase on number of electricity overhead cables to distribute electricity to various regions and thus has hired an investor to set up an aluminium manufacturing plant in kangu village.



However the locals would like to know how the production process will be carried out and how the plant will impact their area.

#### Task:

Prepare a presentation you will make answering the concerns of the locals (11 scores)

#### Item 4

Ethanol is a major component in sanitizers. Following an increased demand for sanitizers countrywide due to covid-19 spike. The government has hired a local investor to set up an ethanol brewing plant in Jinja industrial area to make more ethanol to be used in sanitizers.



The Jinja city council would like to know how ethanol will be produced and how the plant will impact the environment of their city.

#### Task:

Make a write up you will deliver to Jinja city council answering their concerns. (11 scores)

#### Part II

*Answer **one** item from this part in the answer booklet(s) provided.*

#### Item 5

There has been a nationwide destruction of natural resources due to increasing population and human activities. This has attracted the attention of officials from National Environment Management Authority (NEMA).



The officials are planning to sensitize people countrywide about natural resources conservation through organizing workshops in different districts.

#### Task:

As a chemistry learner, write a message you would deliver upon invitation in workshop organized in your district. (11 scores)

### Item 6

People in Seroma village have often been found to be carrying out bush burning, over grazing and stone quarrying. They are now facing breathing problems and low soil fertility and are now wondering why this is happening.



The LC1 chairman has organized an emergency village meeting with a theme, **“ENVIRONMENT CONSERVATION, A RESPONSIBILITY FOR ALL.”**

#### **Task:**

As a chemistry student and one of the village members, make a write up about the theme that you will present in the village meeting. (11 scores)