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CHEMISTRY

Paper 1

July/August

2024

2 hours



## NAMIREMBE DIOCESE COUHEIA SECONDARY MOCK EXAMINATIONS 2024

Uganda Certificate of Education

(CBA)

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.

*Restoring the Church in Education*

*Turn Over*

## SECTION: A

*Answer all the items from this section.*

### **ITEM 1:**

In Chepsikunya town, Kween district, residents are facing an unexpected challenge of water wasting soap. The locals are frustrated as they do not understand the cause and what to do. However, they have heard of another detergent on the market that work better but they need more advice on this.

A resident has sought your assistance, confident that you can use your knowledge of chemistry to provide help.

**Task:** As a chemistry leaner;

- (a) Advice the residents about the category of that detergent.

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- (b) Help the residents understand how that detergent works

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(c) Advice the residents on the challenges associated with the long term use of the detergent.

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(d) Elaborate to the members how the two detergents differ and relate in terms of their properties.

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## ITEM 2

While investigating the reaction of Period 3 elements with water, Tom first considered two elements A and B and the results of their reactions with water is summarized in the table below.

Element	Observation
A	Reacted violently while floating on surface of cold water forming an alkaline solution with evolution of hydrogen gas
B	Reacted slowly with cold water forming an alkaline solution and hydrogen gas but when heated with steam formed a white solid and hydrogen gas

**Task:**

As a chemistry learner:

- (a) Give the category of element A and B

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- (b) Predict the reaction of other elements in Period 3 with water.

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- (c) Suggest one application of the product formed when element(s) in Period 3 react violently with cold water.

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(d) Advise Tom about the dangers associated with the reaction of these elements with water.

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## SECTION: B

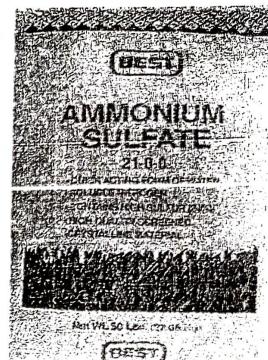
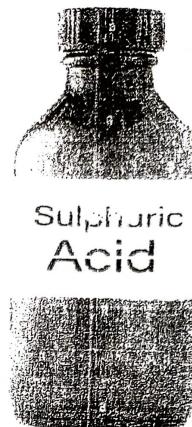
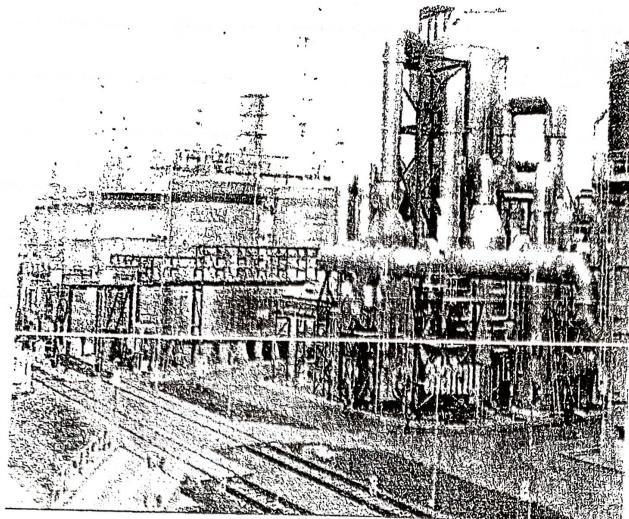
### Part I

*Answer one item from this part.*

#### ITEM: 3

The use of acid containing materials is on the rise in Uganda and around the globe due to their wide applications. Tiwana chemical industry wants to establish a sulphuric acid production plant in Namanve to cater for the increasing demands of acids, however, the municipality has to approve it.

The authorities have requested Tiwana Company to present a detailed write up which can help in the approval process but the Chief Executive officer (CEO) has limited knowledge about the production process of sulphuric acid.

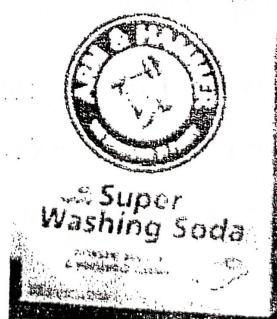
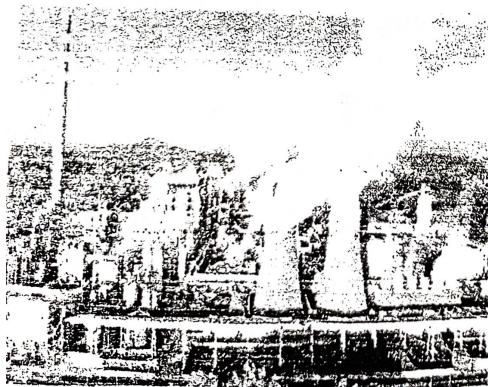


You are a chemist staying in Namanve and the CEO has approached you for help.

**TASK;** Make a write up that Tiwana chemical industry will submit to the municipality.

#### ITEM 4

The people of Nakasongola district are having a complaint about the water they use for washing as it wastes soap and still leaves the clothes with dirty marks. They asked the government to help them provide clean water sources yet it had just dug boreholes for them. Water engineers have advised government to set up a washing soda (sodium carbonate) plant because it will help solve the problem.



Now the government has decided to set up the industry to manufacture the washing Soda in the district though it wants to know how the production process shall be and the likely impact on the environment.

#### Task

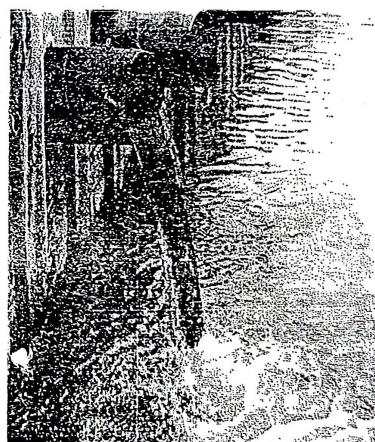
As a chemistry student;

Make a write up you would use to help the government.

## Part II

### ITEM 5

Fresh water bodies like lakes and rivers have been heavily encroached on as a result of rapid urbanization. On world environment day, the Ugandan government wishes to raise public awareness among the citizens.

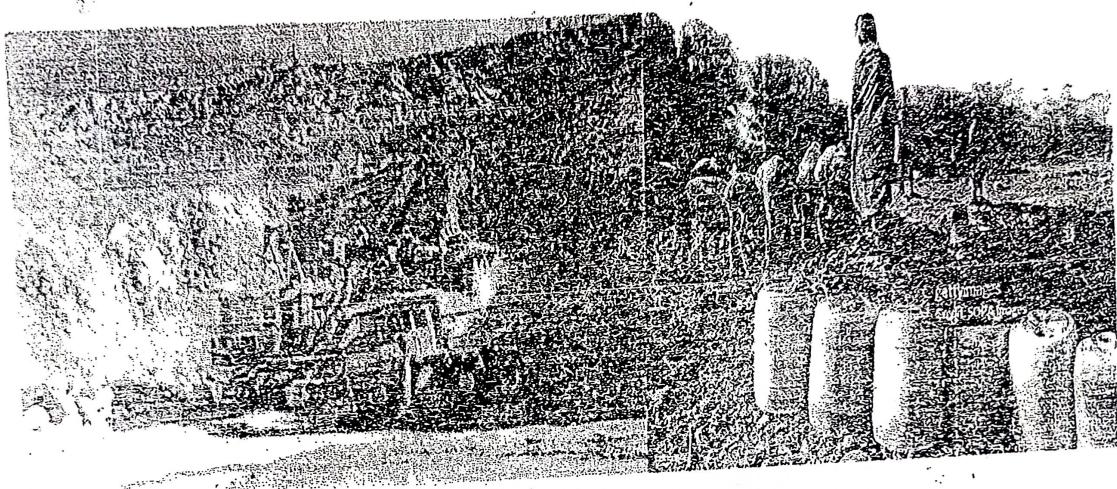


The science club at your school has selected you to give a presentation on the occasion, on the theme "**FRESH WATER IS A BASIC NECESSITY**"

Task: write the presentation you can use.

#### ITEM 6.

People in Karamoja region, have for many years practiced animal husbandry, gold mining, charcoal burning, crop husbandry and stone quarrying, recently the weather patterns have changed leading to unreliable rains, death of animals, drying up of water sources and the little water available in some water sources is not fresh. The locals are now wondering why all these are happening.



Government officials from different ministries are planning to create awareness to the people of the region through sensitization workshops organized in different district communities.

Task:

As a chemistry student, prepare a short presentation you will deliver during the workshop upon invitation.

END