

NAME: SIGNATURE:

545/1

Chemistry

Paper 1

April, 2024

2 hours

UGANDA CERTIFICATE OF EDUCATION

End of term one examination, 2024

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.*

For Examiners' Use Only							
Items	1	2	3	4	5	6	Total
Scores							

SECTION A

Answer **all** the items from this section.

Item 1.



One of the textile industries in Uganda makes sweaters from cotton. However, clients are complaining that these materials are easily decomposed by moths and carpet beetles.

The marketing director has heard of nylon as an alternative material for making similar sweaters. She is uncertain of *its nature, composition* and *effects* on the users.

She has contracted you because of your knowledge of Chemistry to guide her in making a better choice.

Task:

a) Guide the manager on;

i) The class of the selected alternative material. (03 marks)

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ii) The characteristics of materials used; (03 marks)

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b) Use of the material suggested. (01 mark)

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- c) Will the selected alternative have an effect on the natural well – being of the community?
If YES, what should be done? (02 marks)

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Item 2.



During national science exhibition, Joel used a conductivity meter to measure the current passing through the liquid, carried by ions (Lemon juice contains hydrogen ions and citrate ions.) and recorded a lower current of 0.22A much lower than when he used hydrochloric acid.

Joel knows that size of the current depends on the nature of the electrolyte and has come to you for some advice.

Task:

Use your chemistry knowledge to;

- a) Explain;
- i) The categories of the electrolytes he used and give one other example of each.

(03 marks)

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ii) The properties of each electrolyte. (02 marks)

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b) Advice him on how he can measured the **pH** of these electrolytes. Represent your work on a scale. (05 marks)

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SECTION B

Part I (Answer one item from this part)

Item 3.

Air which is a mixture of different components. In military, *marine soldiers and sea divers highly oxygen for respiration in water. Besides this, Liquid nitrogen is also used in medical research, to keep tissue samples frozen.*

This has, therefore increase the demand for oxygen by marine soldiers and nitrogen by medical officials at Moyo hospital for their respective purposes.

The government supply of both oxygen and nitrogen is not enough and is planning to set up an oxygen and nitrogen production plant with minimal environmental impact.

However, the science club members in your school would like to know how the process of production will be carried out.

Task:

As a chemistry student, make a write up you will undertake in the production process.

Item 4.

A new borehole has been dug in your village. However, the water from this borehole leaves alot of dirty marks on clothes upon washing with ordinary soap. All cooking utensils are left with alot of dirty marks.

Upon making this observation, the villagers are putting allegations that technicians were reckless to the point of leaving chemicals within the borehole that could be more hazardous to their lives. The villagers have resorted to using rain water.

Task:

You are among the Technicians, write a speech that you will use in the village meeting to avoid these false allegations



Part II (Answer one item from this part)

Item 5.

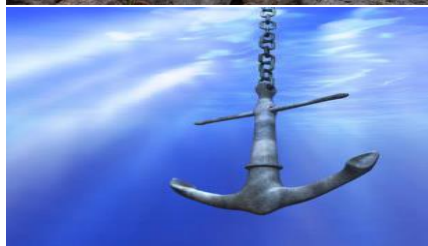
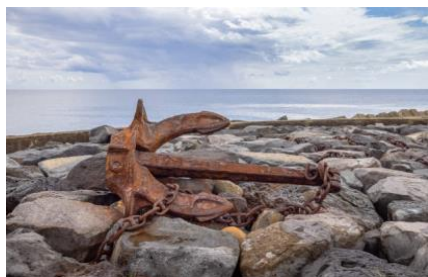
Natural resources have been destroyed as a result of increasing population and human activities. This has attracted the attention of the officials from the National Environment Management Authority (NEMA).



The officials are planning to create awareness to the people of the country through sensitization workshops organized in different district communities.

Task: Prepare a presentation you will deliver during the workshop upon invitation.

Item 6.



Laropi ferry landing site in Moyo is one of the busiest water transport used in the country. For the effectiveness of this heavy duty ferry, its in-built with an **Anchor** as shown.

*This is connected to a heavy and strong chains before its suspended to the river bed **to prevent the vessel from drifting due to wind or current.***

During a routine servicing of this water vessel (August, 2023). This anchor was got damaged and coated by brown layers making it weaker and caused imbalances during floating.

Task: Explain how this coating and damages on the anchor occurred and the possible measures to stop its re – occurrence

END (Be busy)

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