

Candidate's Name:

Stream:

545/1
CHEMISTRY
Paper 1
2024
1Hr: 30 Mins

CHEMISTRY DEPARTMENT EXAMINATIONS BOARD

Uganda National Lower Certificate of Education

CHEMISTRY

SENIOR TWO

1Hr: 30 Mins

INSTRUCTIONS TO CANDIDATES:

*This paper has **four** 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 questions**; Answer **one** item from **this** part.*

*Answers to section **B** **must** be written in the answer booklet(s) provided.*

*Answer **three** items in all.*

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

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1		2	3		4

SECTION A

Write in spaces provided

Item 1

The Uganda Civil Aviation Authority has hired an engineering company to reconstruct the recently damaged bombardier aircraft body. The chief engineer of the company wants to reconstruct a new, good and strong bombardier aircraft body.



However, the chief engineer knows that he has to choose the right material to be used with suitable qualities and properties and thus he has come to you for advice.

Task

Use your chemistry knowledge to;

(a) Explain

(i) The category of the material the engineering company will use. **(3scores)**.

(b) The suitability of the material. **(4scores)**

- (c) The impact of the material to the environment. **(2scores)**

Item 2

Food cooked without common salt is tasteless. Only those suffering from hypertension (high blood pressure) and associated illnesses are advised to eat food without salt. This is because the ions of the chemical elements in salt can worsen their health conditions.

- a) Identify the chemical elements present in common salt and write the formula of their ions. **(2scores)**

A juice vendor makes juice by mixing passion fruit, water and sugar. The vendor separates the passion fruit seeds from the mixtures and adds sugar to make it sweet.

- a) Name the process by which passion fruit seeds are separated from the mixture. **(1 scores)**

- b) Explain why it is possible to separate passion fruit juice by the process named. **(2scores)**

- c) What do you expect to have happened to the sugar crystals when added to the fruit juice? **(2scores)**

- d) Most of the youths in ADUK village in eastern Uganda are involved in cutting trees, burning the wood and finally using the products for cooking. Residents are frustrated with toxic fumes from the activities. They are curious and request to know the nature and composition of the product and why the activities



The chairperson has contacted you as a chemistry student for guidance on what she is about to communicate in the community meeting.

Tasks;

(a) Guide the chairperson on;

d) (i) nature of the product (2scores)

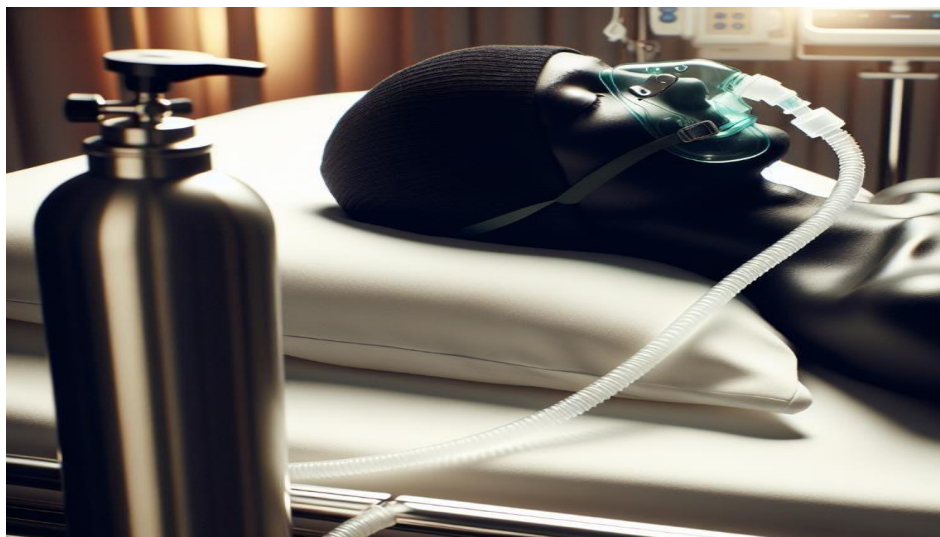
(ii) composition of the product and how it burns in oxygen (2scores)

SECTION B

Answer **one** item from this part

Item 3

Air which is a mixture of different components contains 21% oxygen. Due to a wide spread of respiratory illnesses caused by COVID-19, there was an increased demand for oxygen by patients in hospitals. The government supply of oxygen is not enough and is planning to set up an oxygen 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 chemistry student, make a write up you will use during the presentation. **(11 scores)**

Item 4

Charcoal, Petrol, diesel and other carbon-based fuels are easy to get and are used on a large scale. However, they have the sustainability challenge. The minister of energy and mineral development has organized a conference for students from all over the country with the theme *“Sustainability of Carbon-based fuels saves the Environment”*.

You have been chosen to represent the school in the conference and address the conference about the issue.



Task;

Write a message that you will present to the congregation. **(11 scores)**