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545/1
CHEMISTRY
THEORY
March 2026
2 HOURS

KABALE BRAINSTORM HIGH SCHOOL
Uganda Certificate of Education
CHEMISTRY
Paper 1
2 hours

INSTRUCTIONS TO CANDIDATES:

- ❖ This paper consists of **two** Sections, **A** and **B**
- ❖ Answer **all** items in section **A** and any **one** item from each part in section **B**
- ❖ Answer **four** items in total
- ❖ Answers to Section **A** must be written in the spaces provided
- ❖ Answers to Section **B** must be written on the answer sheet provided
- ❖ Equations may be included where necessary
- ❖ Untidy work will lead to loss of marks
- ❖ Use this information where necessary; **H = 1, C = 12**

For scorer's use only				
1	2	3/4	5/6	TOTAL

SECTION A

Item 1

On a school break, Nakato visited her aunt in a hilly rural area where she helped with laundry chores. She noticed that the washing agent her aunt used produced very little lather, and a greyish layer formed on the clothes and in the water. Later, back at school in the city, Nakato used a different cleaning agent that foamed easily, and no layer was left behind. Curious about the difference, she decided to compare the two products in her chemistry journal.

Task:

As a chemistry learner;

- a) Categorize the products used from the each location

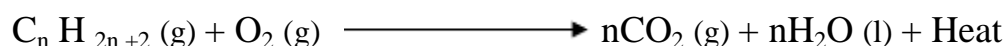
- b) Describe how the product used at school performs its cleaning function

- c) Give the side effect associated with the school product and explain how its impact can be mitigated

d) Evaluate the two products by stating one similarity and one difference between them

Item 2

The gaseous hydrocarbon X is a carbon – based fuel used in racing cars. Its internal complete engine combustion, gave out carbon dioxide gas, water vapour and heat energy according to the equation below:



The preliminary experiment shows that hydrocarbon X contains **80%** carbon and the rest being hydrogen whose relative molecular mass is **30**. However, the ministry of games and sports wants to know how to determine the molecular formula of X and how much volume of the carbon dioxide gas in litres will be emitted if **80g** of X were completely burnt to produce heat energy.

Task:

Use your chemistry knowledge to:

a) Explain the:

(i) Category of the homologous series used as carbon – based fuel.

(ii) Suitability of the gaseous product(s) emitted.

c) Advise on the impact arising from using this fuel type to the environment.

SECTION B

Part I

Item 3

Kibambuli village has been hit hard by red eye outbreak. The village is best known for growing cassava and millets, which are used to make local drinks called “Maruwa”. But because the outbreak has worsened in the area, the ministry of Health has locked down the village. An investor from the nearby town wants to set – up a production process for plant to produce ethanol on large scale. This attracted the attention of the people in this area and they are wondering how this project will work, while benefiting the community without affecting the environment. You have been invited by the local leaders to sensitize the villagers.

Task:

Prepare a presentation you will use during the meeting.

Item 4

Bio gas has become the most favorite source of fuel for many Ugandans replacing traditional fuels like charcoal and fire wood at home. Some people especially elders have negative thoughts about the use of bio gas and have requested the National Environmental Authority (NEMA) through their leader to sensitize the community about the nature, environmental impacts and importance of the bio gas. You have been appointed as the main spokesperson from NEMA to attend a hot meeting organized by the elder leader of the community.

Task:

As a chemistry learner, write a message you will deliver during the meeting.

Part II

Item 5

Kitumba is a hilly place in Kabale, western Uganda. The youth in Kitumba have for a long time been laying bricks and cutting down trees to burn the clay bricks and sell some as firewood in Mwanjari market. The children in Kitumba are always fishing using small nets and sometimes some poison to maximize more fish from fishing in the small ponds. These human activities have resulted into shortage of fresh water and the agricultural produces yields have lowered with death of livestock. The community leaders have organized a meeting to sensitize the other community members under the theme “MY NEW KITUMBA” and you have been invited.

Task:

As a chemistry student, make a write up you will display upon invitation.

Item 6

Kibaya village in Kisoro district is a rocky area gifted with some minerals like iron. The locals carry out mining and stony quarrying as their main economic activities. This has captured the attention of the National Environmental Management Authority (NEMA) because the natural resource has been highly exploited. You have been selected as a senior Environmental protection officer from NEMA to educate the villagers about the nature of the natural resource, impacts of exploiting it and its relevance in the environment. You are required to attend the meeting organized by the LC1 chairperson of the area with a theme “MY ENVIRONMENT MY RESPONSIBILITY”.

Task:

As a chemistry learner, make a write-up you will deliver during the meeting.

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