

Students Name:

School Name..... Index Number

545/1

CHEMISTRY

Paper 1

JUNE/2025



HES MOCK EXAMINATIONS 2025

UGANDA CERTIFICATE OF EDUCATION

CHEMISTRY

PAPER 1

2 HOURS

INSTRUCTIONS

- 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. Use where necessary; Ca=40, C=12; O=16.

SECTION A

ITEM 1.

On a certain introduction ceremony every one kept wondering and was left amazed by the aroma and taste of the food served, that it was very delicious. The spokesperson kept repeating that "have you noticed the application of chemistry in the food industry"? So contact the high end catering service providers in case you need food on your function. One of the ladies wants to understand the spokesperson properly.

TASK.

As a student of chemistry, basing on the spokesperson's statement help him to advise the lady on:

a) The category of the ingredients used.

b) The Suitability of the variety of ingredients used by the catering service providers.

c) The possible problems associated with the ingredients used by the service provider.

d) Evaluate the choice of ingredients used by the service provider

ITEM 2.

A construction company relies on calcium metal to produce calcium oxide, a crucial component in cement used for building strong and durable structures. Calcium reacts with oxygen in the air to form calcium oxide according to the following equation.



Alternatively the company was advised to obtain the calcium oxide by heating limestone which would evolve carbondioxide gas as shown in the equation below. $\text{CaCO}_3\text{(s)} \longrightarrow \text{CaO(s)} + \text{CO}_2 \text{ (g)}$

If 85g of calcium oxide are required per 50kg bag of cement, the industry procurement officer is interested in knowing how much by mass of calcium metal is required to produce 60 bags of cement in a day.

You have been contacted for help.

TASK.

As a chemistry learner;

(a) Explain the categories of the products formed.

(b) Suggest the properties of the gaseous product that make it useful in daily life.

(c) Calculate the mass of calcium metal required for the day's activities.

(d) Explain the impact of one of the products on the environment.

SECTION B

PART 1 (answer one item from this part)

ITEM 3.

There is high demand of oxygen in referral hospitals in Uganda. An investor was contacted by government to set up an oxygen manufacturing plant at Namanve, one of the swamps near Kampala to tap into the opportunity. However, the residents seem not to understand how the process will occur plus its consequences and are resisting the project.



As a senior four candidate with the knowledge of chemistry, you are required to create awareness to the members and provide the necessary information.

TASK:

As a chemistry learner, write a presentation you will use upon meeting them.

ITEM 4.

People in Kisinza village only have access to borehole water which is not effective in cleaning clothes when soap is used. A local investor has been cleared by government to set up an industry that makes soapless

detergents in the area however he is facing resistance from the community members about the issue of starting up the factory and he is equally lacking knowledge about the manufacturing process.



The head teacher has appointed you to go and represent the school in the meeting organized by the chairperson of the area to settle the wrangles between the investor and the citizens of the area.

TASK:

As a chemistry learner write a message you would deliver in this meeting.

PART 11 (answer one item from this part)

ITEM 5.

During her School holidays, Eva visited her aunt who works at a stone quarry. She noticed that explosives were being used to blast big rocks to form small stones (aggregates) and there was a lot of dust rising into the air.



Besides the social benefits, Eva was concerned about what would happen to the site and community if the activity continued over time.

TASK:

As a learner of Chemistry, make a write-up to respond to Eva's concern.

ITEM 6.

Fresh water bodies like lakes and rivers have been heavily encroached on as a result of increasing Uganda's population. Many people have cleared all the vegetation around the lakes to set up buildings and beaches. Many industries are dumping their waste products in these water bodies. Fishermen are on the other hand using poor method of fishing ending up killing other species in the water.



On this year's World Environment Day, the science club in your school wishes to raise public awareness among the entire student's community on the matter.

TASK:

The science club at your school has selected you to give a presentation on that day following the theme "SAVE OUR WATER BODIES".

END