

Candidate's Name:

Signature;.....

Random No.						Personal No.		

(Do not write your School / Centre Name or Number anywhere on this Booklet)

545/1

CHEMISTRY

Paper 1

April. 2024

2 hours

THE CHEMISTRY DEPARTMENT

Uganda Certificate of Education

CHEMISTRY

Paper 1

2 hours

INSTRUCTIONS TO CANDIDATES:

The 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.

Section **B must** be written on the answer booklet(s) provided.

Use where necessary;

Ca = 40; C = 12; O = 16

SECTION A

Answer **both items** from this section in the spaces provided

Item 1.

The discovery of Uranium-238 in Mubende district triggered the government's plan to establish a nuclear power plant in the area. Research shows that Uranium-238 undergoes disintegration releasing massive amount of eco-friendly energy, which the government is willing to capture and use it to power factories and industries.

However, the community members are concerned about risks associated with nuclear power plants and need clarification from the government.

Task: As a chemistry learner;

- a) Identify the type energy the government plans to power factories and industries.

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- b) Suggest any other use of this form energy that is to power factories and industries.

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- c) Explain any danger associated with this form energy released from uranium-238 powering factories and industries and give its mitigation.

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Item 2.

An industry wanted to produce lime for treatment of acidic soils. The production of lime involves heating limestone strongly which results into its decomposition according to the equation;



The industry is also interested to know how much solid was produced during the process since it is useful. Before the production, an experiment was performed where 75g of limestone were heated until there was no further change. You have been contacted for help.

Task:

As a learner of chemistry;

- a) Explain the categories of the products.

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- b) Suggest the properties of the solid product that make it useful in daily life.

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- c) Calculate the amount of solid product that was formed.

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d) Explain the impact of one the products above on Environment

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SECTION B

Part I

Answer one item from this part in the answer booklet(s) provided.

Item 3.

In Uganda, copper wires are used mainly for transmitting electric power. To ensure the availability of wires, the government is considering setting up a copper production plant in a certain area. However, the residents of the area need to be sensitized about the industrial processes, social benefits, side effects and how they can be overcome. Your head teacher has been identified to sensitize the residents.

Task:

As a learner of Chemistry, prepare a write-up that your head teacher will use to sensitize the residents.

Item 4.

Uganda battery limited (UBL) uses sulphuric acid as the main electrolyte in their batteries. In a bid to cut the costs on importing the acid, the management has constructed a production unit to set up a sulphuric acid production plant near Kilembe mines in Kasese region. The community is not convinced about its likely environment impacts and how the environmental processes will be achieved. Some claim that the plant will not benefit them at all. Therefore, they should not go ahead with the proposal.

The science club members in your school would like to know the how the production process would be carried out. They are seeking for your guidance before the school assembly is held.

Task; As a chemistry learner, make a write up you will use during the presentation while on the assembly.

Part II

Answer one item from this part on the answer sheets provided.

Item 5.

During his school holidays, LOLI SAM visited his uncle who works at a stone quarry. He 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 as shown in the figures below



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

Task;

As a chemistry learner, make a write-up to respond to Sam's concern.

Item 6.

Fresh water bodies like lakes and rivers have been heavily encroached on because of rapid urbanization. On world environment day, the Ugandan government through the National Environment Management Authority, is set to rise awareness among the public. The science club of your school has been invited to be part of the sensitization team.

Task:

As a chemistry learner, prepare presentation that will be used during the sensitization under the theme "*FRESH WATER IS A BASIC NECESSITY*".

END

I wish you what you wish yourself