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
Oct./Nov. 2024
2 hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

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.*

Use where necessary;
Ca = 40; C = 12; O = 16; 1 mole of a gas occupies 22.4 dm^3 at s.t.p.

Turn Over

SECTION A

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

Item 1.

During the second world war, the cities of Hiroshima and Nagasaki in Japan were bombed using the most lethal weapon of the time, which caused massive destruction as shown in figure 1. However, the energy that was used can be useful in the treatment of cancerous growths in humans. Up to now the impact of the bombing is still being felt in Japan.

Fig. 1
https://www.pennlive.com

Task:

As a learner of Chemistry;

(a) identify the type of bomb used.

_____

_____

_____

(b) suggest any other use of the form of energy that was used in the bomb.

_____

_____

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_____

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_____

(c) explain the other danger associated with the form of energy in the bomb and give its mitigation.

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;

$$CaCO_{3\,(s)} \longrightarrow CaO_{(s)} + CO_{2(g)}$$

The industry is also interested to know how much gas is evolved during the process since the gas is useful.

Before the production, an experiment was performed where 25 g 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.

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

(c) calculate the volume of the gaseous product measured at *s.t.p*, that was formed.

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

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 sensitised about the industrial processes, social benefits, side effects and how they can be overcome.

Your head teacher has been identified to sensitise the residents.

Task:

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

Item 4.

Cement is one of the most commonly used building materials. In order to meet the high demand of cement in Uganda, many cement factories have been set up across the country, one of which is shown in figure **2**.

You are part of the Chemistry class that visited one of the factories and the process of producing cement was explained to the class. You have been invited to a radio talk show to explain how cement is produced.

After your presentation one of the callers wants to know whether there is any impact associated with the process you have talked about.

Fig. 2

https://thelocal.ug/wp-conent/uploads

Task:

Make a write-up of the sensitisation message up to the end of the talk show.

Part II

*Answer **one** item from this part in the answer booklets provided.*

Item 5.

Peter, the cattle keeper, grazes his cattle on a community land. During the dry season, he practices bush burning and also takes his cattle to drink water from the community water source. Peter's practices have raised concern in the community.

The area chairperson has organised a meeting to create awareness for Peter and the community.

Task:

As a learner of Chemistry make a write-up of the message the chairperson will present to the community.

Item 6.

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 as shown in figures **3** and **4**.

Fig. 3

Fig. 4

https://www.google.com/url

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.

END