

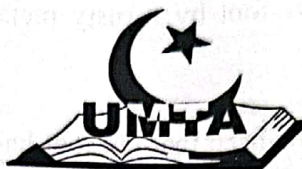
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Chemistry

Paper 1

July – August 2025

2 Hours



UGANDA MUSLIM TEACHERS' ASSOCIATION

UMTA JOINT MOCK EXAMINATIONS – 2025

Uganda Certificate of Education

Chemistry

Paper 1

2 Hours

NAME.....

INDEX NO.....SIGN.....

**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 in 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:  $Fe = 56$ , 1 mole of a gas occupies  $22400\text{cm}^3$  at s.t.p.*



## SECTION A

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

### Item 1.

During a campaigning rally organized in a newly constructed playground, one of the supporters got a small cut on his foot by a rusty metallic bar as he was dancing and morale boosting.

Towards the end of the rally, he realised that the foot had got swollen. He thought it was fatigue, but on visiting a nearby hospital, the diagnosis revealed an infection. In order to kill the pathogens, metronidazole tablets were prescribed to him. When he reached home, he abandoned the physician's prescription arguing that the medicine has many side effects and instead, he took a green extract from plants around. After three days, he had not improved and could not find a solution. He has met you and has asked you for advice.



### Task:

As a chemistry learner;

- (a) Explain to the supporter the category of product that was prescribed at the hospital and how it works.

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- (b) Help the supporter to understand any one side effect associated with the use of the product above and how this side effect can be mitigated.

- (c) How would you evaluate the different categories of products that can be used on the infection.



**Item 2.**

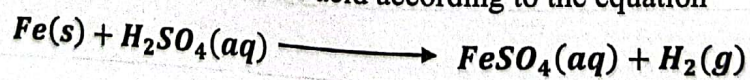
A manufacturing company of steel kitchenware products uses steel scrap bought from local people. Recently, the supply of good quality steel scrap raw materials reduced yet the demand for the kitchenware products is high.

In a bid to get the required raw materials, the procurement officer of the company got a new supplier of better-quality steel. For the steel to produce good kitchenware, an expert advised that the percentage of iron in the steel should not be below 98%.



When a 0.114g sample of steel was treated with dilute sulphuric acid, 448cm<sup>3</sup> of hydrogen gas measured at s.t.p was obtained.

Steel contains iron which reacts with the acid according to the equation



**Task:**

As a chemistry learner;

- (a) Explain the category of the substance from which the kitchenware is made.

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(b) Make the company understand why the substance in (a) above is preferred to pure iron in making kitchenware and give one other use of the substance.

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(c) Help the company to know whether the steel will make good kitchen ware.

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(d) Give one danger of the substance in (a) and how it can be mitigated.

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## SECTION B

### Part I

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

#### Item 3.

Residents of a certain village in Eastern Uganda use mechanized agriculture to grow cassava and millet on a large scale. However, the demand for the produce in the nearby city has reduced. Recently, as their leader carried out research, he realized that if they made value addition on their produce by converting it into another product that could be used for making sanitizers, they would get more money and also solve some problems in the society.



Through engagements with district leaders, the government has agreed to set up a factory in the area. However, the residents have little knowledge on the production process and the likely effect to the environment.

You have been invited to a local radio station to educate and give advice to the masses on the production process and its impacts.

#### Task:

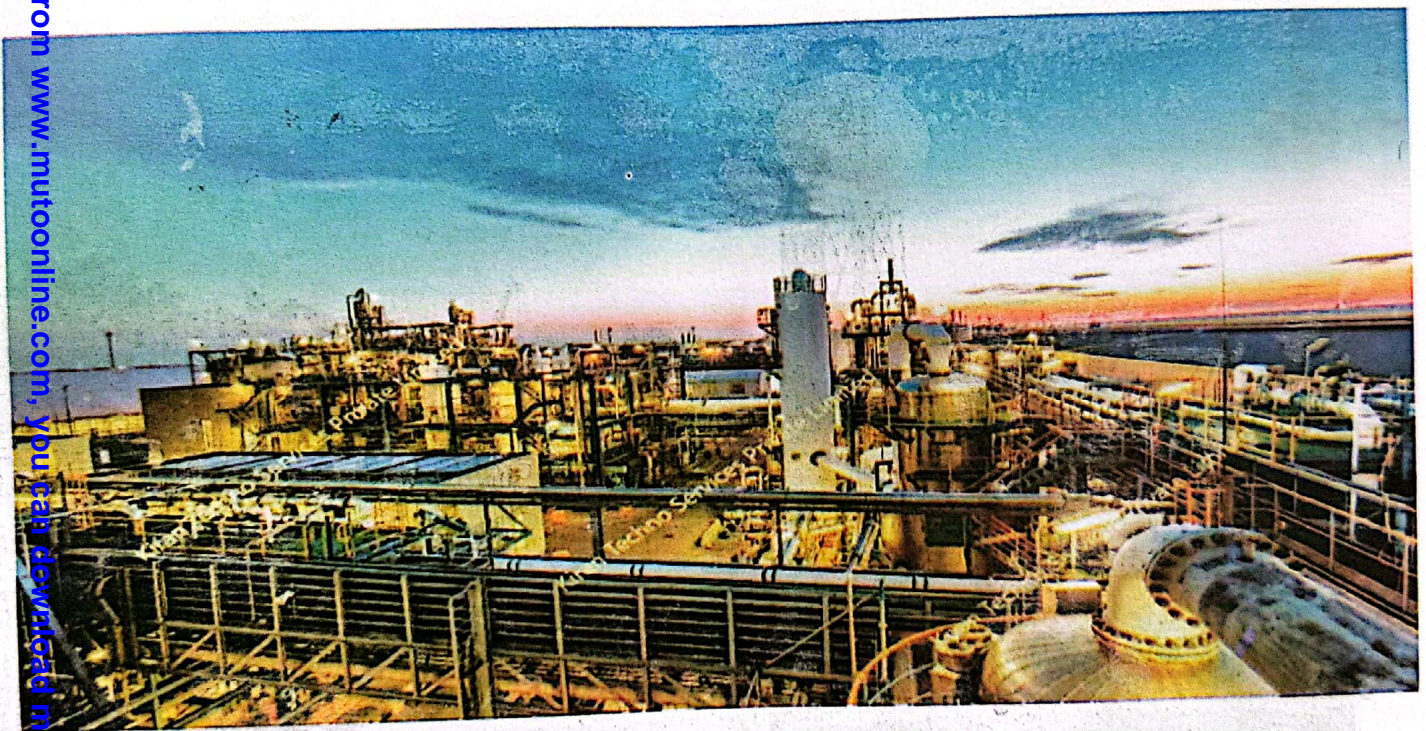
As a learner of Chemistry, make a write up of a message that you would deliver.



#### Item 4.

Sodium hydroxide is one of the substances used in the manufacture of soap, in textile industries and in pharmaceutical industries. Many of the industries import already made sodium hydroxide which is expensive, thus making the production process costly.

Fortunately, it is discovered that the main source of sodium hydroxide is rock salt which exists in Lake Katwe in Kasese district in Uganda. Therefore, a chemical plant is to be established in the area in order to overcome the importation costs.



The area member of parliament has identified you with a group of chemists to deliver information to newly recruited workers of the plant.

#### Task:

Explain to them the process of manufacturing sodium hydroxide, pointing out the challenges of the industry on the environment and the potential benefits.



## Part II

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

### Item 5.

Upon the discovery of crude oil in the Albertine Graben region, Uganda is likely to become a major oil producer in East Africa. However, the extraction and production process would involve displacement of local communities. This has raised concerns among human rights activists, livelihoods and social justice advocates.



Imagine you are on a team that the Ministry of Energy and Mineral Development sent to sensitize the public about the sustainable use of the natural resource.

#### Task:

As a learner of Chemistry, write down a message that you would deliver to the public.



**Item 6.**

Uganda's environmental sustainability and public health are under threat arising from increasing pollution due to rapid urbanization, industrial activities, vehicle emissions and agricultural practices. The Uganda Ministry of Environment and Natural Resources, through selected teams of chemists, is working hard to address the issue through policy interventions, regulations and public awareness campaigns. Your headteacher has been requested by one of the teams to include a member of the school and you have been chosen.



**Task:**

As **one** of the team members, make a write-up of the main ideas you would share with the community.

**END**