

Candidate's Name: .....

Signature: .....

**545/1**  
**CHEMISTRY**  
**Paper 1**  
**2024**  
2 hours

**CHEMISTRY DEPARTMENT EXAMINATIONS BOARD**

**Uganda Certificate of Education**

**CHEMISTRY**

**Paper 1**

2 hours

**INSTRUCTIONS TO CANDIDATES:**

*This paper has **six** examination items which are divided into **two** sections; **A** and **B**.*

*Section **A** has **two compulsory** items. Answers to section **A** **must** be written in the spaces provided.*

*Section **B** has **two parts; I and II**. Answer **one** item from **each** part.  
Answers to section **B** **must** be written in the answer booklet(s) provided.*

*Answer **four** items in all.*

*Any additional item answered will **not** be scored.*

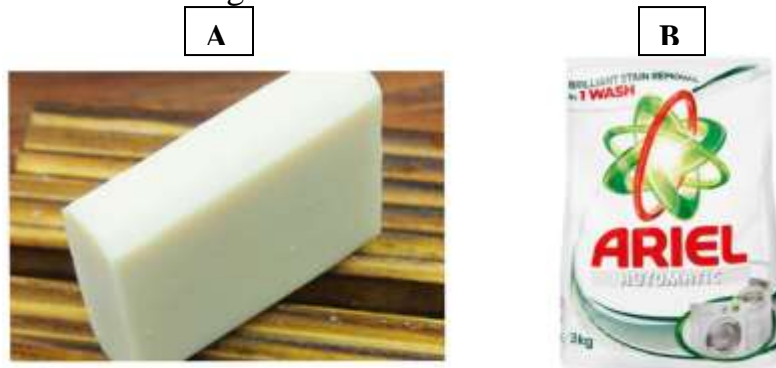
<b>For Examiner's Use Only</b>					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>

## SECTION A

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

### Item 1

Upon getting borehole water and on their way back home, John and Peter slipped, fallen down and their white shirts became dirty. John decided to use a detergent **A** to clean his shirt but it remained with some brown stains despite rinsing it many times. Peter also used another detergent **B** and his shirt was cleaned with in one rinse.



**Fig 1.** Shows detergents used by John and Peter to wash their shirts.

### Task:

As a chemistry learner;

(a) Explain

(i) The categories of products used by John and Peter. (02 scores)

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(ii) How the products work and the challenges associated with the long term use of the products. (05 scores)

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(b) Evaluate the products (02 scores)

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**Item 2**

The Uganda Civil Aviation Authority has hired an engineering company to reconstruct the recently damaged bombardier aircraft body. The chief engineer of the company wants to reconstruct a new, good and strong bombardier aircraft body.



However the chief engineer knows that he has to choose the right material to be used with suitable qualities and properties and thus he has come to you for advice.

**Task:**

Use your chemistry knowledge to;

(a) Explain

(i) The category of the material the engineering company will use (03 scores)

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(ii) The suitability of the material (04 scores)

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(b) The impact of the material to the environment. (02 scores)

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**SECTION B**

**Part I**

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

**Item 3**

Ammonia is used on a large scale to manufacture fertilizers which are highly needed by the farmers. In an attempt to continue supporting the country's agricultural sector. The government is seeking to ensure a steady availability of ammonia and thus has

hired an investor to set up an ammonia production plant with minimal environmental impact in Kitambala town.

However the town community would like to know how the production process will be carried out and how will they benefit from this plant.

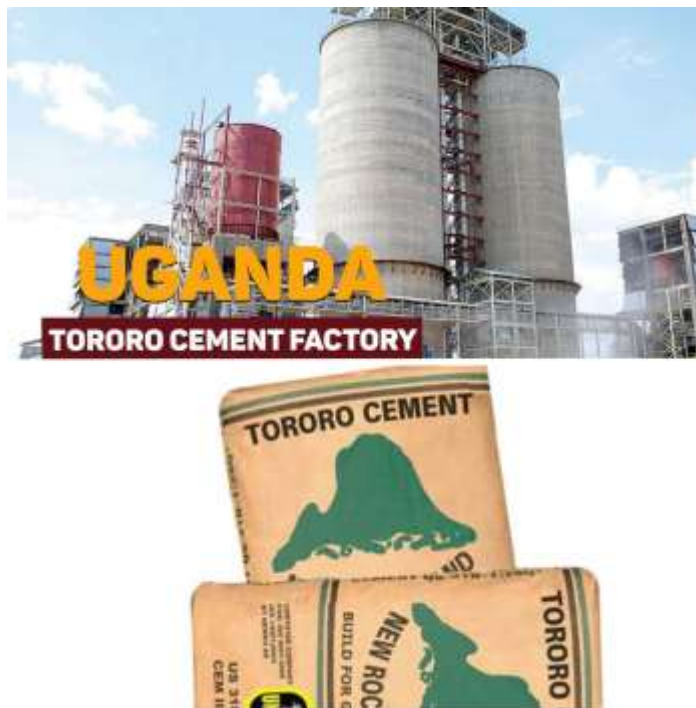
**Task:**

As a chemistry student, make a write up you will deliver during presentation.

*(11 scores)*

**Item 4**

Cement is one of the ingredients required for constructing good and strong houses. Following the increased demand for cement due to increased need for human settlement, the government has hired a local investor to construct a new cement manufacturing factory in Tororo district to ensure an increased supply of cement countrywide.



The district locals are concerned about the environmental effects that will result upon construction of the factory in their district and how the production process will be conducted.

**Task:**

Prepare a presentation you will make answering the concerns of the locals. *(11 scores)*

## Part II

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

### Item 5

Following the recent discovery of some of the natural resources in the Albertine region, many people have started encroaching onto the land of this region by clearing trees to create space for settlement and charcoal burning and also the water of Lake Albert is exponentially deteriorating. This has attracted the officials of Hoima district environment management authority.

The officials want to sensitize people in the Albertine region about environment conservation through a workshop.



### Task:

As a chemistry learner, prepare a short message you will deliver upon invitation to the workshop. (11 scores)

### Item 6

There has been a nationwide destruction of natural resources due to increasing population and human activities resulting into adverse climate changes. This has attracted the attention of officials from the National Environment Management Authority (NEMA).



The officials are planning to create awareness to the people of the country through sensitization workshops organized in different district communities.

**Task:**

As a chemistry student, write a message you will deliver upon invitation in the workshop organized in your district. *(11 scores)*