

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

March, 2025

2 hours



EXCEL EXAMINATION BUREAU

RESOURCEFUL EXAMINATION 2025

Uganda Certificate of Education

CHEMISTRY

PAPER 1

2 hours

INSTRUCTIONS TO CANDIDATES:

*This paper consists of **two** sections; **A** and **B***

*Section **A** contains **two** broken scenario items which are **compulsory***

*All responses to section **A** **MUST** be answered in the spaces provided*

*Section **B** consist of **two** parts (**I** and **II**).*

*All parts contain unbroken scenario items where a learner is expected to choose **one** item from each part*

***Responses** to this part must be written on the answer booklet provided*

*Choose **one** item from each part in section **B***

Any unnecessary crossing and poor handwriting may lead to loss of scores

(1 mole of a gas occupies 24000 cm³ at room temperature, Mg = 24)

For Examiner's Use Only

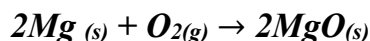
Item	1	2	3	4	5	6
Scores						
Initials						

Turn Over

SECTION A

Attempt all items in this section

1. A chemist in Fire works manufacturing company measured **3600 cm³** of a mixture of nitrogen and oxygen gas at room temperature and pressure which they used to explode 4.8 g of magnesium made material to produce the bright sparkling light absorbed in the manufacture of fire works as in equation below



Task

As a chemistry learner,

- (a) Explain the category of the structures formed by solid reactant and product.

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- (b) Illustrate how bonding occurs in the solid product.

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- (c) Determine the percentage of nitrogen that remained unreacted from the mixture.

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- (d) State any **one** chemical process that decreases the composition of the gas used in the production of fireworks

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2. A pharmaceutical company dealing with manufacture of medicine from organic compounds had inadequate **non-poisonous solvent** for dissolving the plant extracts. The chemists analysed the solvent used and found out that it had a general formula $C_nH_{2n+1}OH$ and derived from a given series.

Task

As a chemistry student,

(a) Explain

- (i) category of the solvent

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- (ii) how do you purify such solvent if it's in contact with other impurities for its continued use.

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- (iii) describe the possible dangers associated with continued use of the solvent

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- (iv) guide the company on how to choose the better solvent.

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SECTION B

Part I

Attempt one item from this part

- Community members of Odungura village have complained to their LC1 Chairperson about the industry which channels its effluent to open water source and has caused health threat to the community. The chairman has liaised with government agencies in the district to alleviate the challenge. The government has cleared an investor to set up water treatment plant with minimal environmental effect but the villagers need to understand how the process of treatment will take place and possible benefits.

Task

As a chemistry learner write a report you will present to the local community.

- 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 soapless detergent manufacturing plant with minimal environmental impacts however he is facing resistance from the community members and he is equally lacking knowledge about the manufacturing process.

Task

You have been appointed to represent the school in the meeting organized to settle the disputes. Write a message you would deliver in this meeting.

Part II

Attempt any one item from this part

- Recently, oil deposits were discovered in Western Uganda. A Chinese investor has been contracted by the government to extract the oil but the people around are scared of the outcomes. You have been invited by the LC Chairman of that area to attend one of their meetings, and you are the only person who has some knowledge about natural resources, so the chairman has requested you to give a talk about the issue.



Task: As a chemistry learner, make a write up of your speech

- Urbanization and industrialization have caused freshwater bodies to suffer from severe pollution. The Uganda government aims to create public awareness regarding the natural resource through various initiatives. One of the initiatives is to involve students with good knowledge of chemistry in radio talk shows.

Task: Write the presentation you can use.

END