

NAME:.....STREAM:.....

P 545/1

CHEMISTRY

PAPER 1

2 HOURS



WUNNA EDUCATIONAL SERVICES
LEARNERS' ASSESSMENT BOARD (WESLAB)

Uganda certificate of Lower secondary education

M.O.T 1 ASSESSMENT ONE

S.3 CHEMISTRY PAPER 1

2 HOURS

INSTRUCTIONS TO LEARNERS:

- ✓ *This Paper consists of two **Sections A and B**. It has **five** examination items.*
- ✓ ***Section A** consists of **2 Compulsory items**.*
- ✓ ***Section B** consists of **2 parts; I and II**. Answer one item from **each** part.*
- ✓ ***Attempt 4 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 other additional Item(s) shall not be scored.*

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EXAMINER'S USE ONLY:

SECTION	A	B	TOTAL
SCORE			
COMMENT			

SECTION A (20 SCORES)

*Answer **all** items from this section.*

ITEM 1:

It's a laundry day for two friends, Nakku and Kaggwa. They both decide to do their laundry together though using different detergents. Nakku uses detergent X, while Kaggwa uses detergent Q. After washing and rinsing their clothes, they notice that Nakku's clothes are still stained while those of Kaggwa are sparkling clean. She is taken by surprise and asks Kaggwa he got his clothes clean. Kaggwa replies; "I used detergent Q. I've been using it for a while now, and it always gets my clothes clean." Nakku is curious to know the magic behind.



X



Q

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TASK:

Take him through on;

a) What are the categories of detergents used by the two friends?

(2 Scores)

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c) How does the compound work?

(5 Scores)

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d) Describe two side effects (one to humans and one to the environment) of the compound and how they can be mitigated.

(3 Scores)

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ITEM 2:

You have been hired as part of the planning team for a new road project in your community, aimed at easing traffic congestion. The government has tasked you with designing a road that will be both efficient and sustainable. Your team must consider the types of materials to be used in constructing the road and suggest sustainable

measures to ensure the road can handle traffic over the long term while minimizing negative environmental impacts



TASK:

As a chemistry learner,

a) Which categories of materials are commonly used in road construction? **(3 Scores)**

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b) How can the project balance the need for quick construction and long-term sustainability? **(5 Scores)**

d) What innovative or local materials might be used in the project to reduce costs or environmental harm? **(2 Scores)**

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SECTION B (60 SCORES)

PART I

*Select **one** item from this part*

ITEM 3:

You're a chemical engineer working for a local biofuel company in Mbale. The company has decided to start producing ethanol fuel from cassava, which is widely grown in the eastern region. This production shall serve to increase the supply of ethanol for manufacture of sanitisers to help reduce on the number of microorganisms that affect people's health.



TASK:

You're required to design coherent process procedures that will be used in the production plant. **(20 Scores)**

ITEM 4:

The Government intends to boost its pharmaceutical industries by providing more sulphuric acid which acts as a catalyst in many drugs and vaccines. It has laid a project for the same and has given it to you as the production manager in order to prepare large volumes of the acid to curb its scarcity during the production process of these medicines.



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Task:

Make a write up guiding you're the government on how to boost the pharmaceutical industries. **(20 Scores)**

PART II

*Answer **one** item from this part*

ITEM 5:

People in Fort Portal have an under developed city compared to what it would be looking like especially by the fact that the area has lots of mineral and rock resources. Peasants have always found shiny stones in their gardens and sold the cheaply while many have actually just used them to decorate their buildings. In most valleys, many stones have been mined and some are strong, others are weak depending on how deep the stones were extracted. As a geologist working for the Uganda Geological Survey in Uganda, you've been assigned to make a study of the area and prepare a speech for the Minister of Fort Portal City on what he'll say to the peasants in order to revive and boost the development of the city.

TASK:

Prepare a detailed write-up for the Minister. **(10 Scores)**

ITEM 6:

You're an environmental consultant working for the Kampala Capital City Authority (KCCA) in Uganda. The city is experiencing severe air pollution problems due to rapid urbanization and industrialization. These have gravely affected the air quality leaving the environment and its occupants at a healthy risk. You have been contacted to find a sustainable solution to the problem.

TASK.

Describe, in a single write up, how you would go about the matter. **(10 Scores)**

END