

545/1
CHEMISTRY
Paper 1
August - 2024

2 HOURS



TORORO ARCHDIOCESE EXAMINATIONS BOARD
(Lower Secondary Curriculum)

Uganda Certificate of Education

MOCK EXAMINATIONS – AUGUST – 2024

CHEMISTRY

Paper 1

INSTRUCTIONS TO CANDIDATES

- This paper consists of two sections **A** and **B**. It has 6 (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 items answered will not be scored.

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SECTION A

Answer **all** items from this section.

Item 1

The intelligence of the farmer sustains the world. Our Country Uganda is called pearl of Africa. This is because agriculture is a back bone of our Country's economy, source of food /income for families and nation at large.

Unfortunately, these days, crops are under disease attacks and as well lack natural nutrients from the soil. This has worried farmers since they no longer yield rich harvest.

According to a Senior researcher and consultant in agriculture, It is believed that soil pH is the major problem that has affected good yields.

TASK

(a) What do you understand by soil **pH**?

(02 marks)

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(b) Explain why soil **pH** is important in the practice of crop production. (03 marks)

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(c) Describe an experiment to determine the amount of acid in the soil. (Use locally available materials.) (03 marks)

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(d) Write any three equations showing formation of neutral when an acid and a base react. (03 marks)

- (i)
- (ii)
- (iii)

Item 2

Mechanical properties of matter are key in any construction. Different materials that are used to construct a house have different qualities based on their nature.

Rocks, sand, wood, water, soil, bars, glass, paint, plastics and iron sheets are the most commonly used materials at construction.

The choice of materials is therefore dependent on the purpose it is meant to do, it's resistance to the applied force and above all its impact to the environment.



TASK

As a student who has understood the Chemistry of structures and bonding, use your knowledge to explain.

- (i) The qualities of materials that make it best fit for construction. (Base your qualification on the mentioned materials above). (05 marks)

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- (ii) Mention and explain the categories of the materials above. (05 marks)

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- (iii) Suggest with reasons how a durable house can be constructed. (03 marks)

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SECTION B

Part one

Answer one item from this part.

Item 3

Price fluctuation is a necessary evil! When prices go down buyers take advantage as business owners burst in fear of a great loss. Palm oil is a raw material in the making of soap. It's price continually falls. A group of HIV infected women began to buy the above oil and engaged in an economic activity of making soapy detergents which would be sold internationally. The above women group are demanding a vast piece of land to set a soap factory.

The dwellers on the land are perplexed as they fear encroachment on their land and also unproductivity of the land.

Lovers of Science, wants you as a learner of Chemistry who is well versed with the steps involved in the preparation of soapy detergents to enlighten the women group above.

TASK

Prepare the presentation of about 800 words you would give to the above women group. Let your presentation give clarity to the two fears named above. (15 marks)

Item 4

Homemade cookies and bread are essential in a human diet. Buyers make preferences on where to acquire those cookies and bread.

The two traders of these cookies are De Chantal and De Kamara

De Chantal purchased come cookies from De Kamara to sustain her business since everyone preferred De Kamara's cookies and bread.

De Kamara's cookies and bread had sweet aroma, taste, appear good looking, thick and last long.

She (De Chantal) has done all this in an attempt to gain help, improve sales for bread and cookies and so remain a main competitor in the business cycle.

TASK

- (a) As a learner who now understands well food additives and the ingredients in the named cookies and bread, make a write up describing the suitability of the ingredients in foods named above. (05 marks)

- (b) Write an official note, advising De Chantal's consumers of cookies and bread. (05 marks)

Part two

Answer one item from this part

Item 5

Productivity of crops is weather dependent (i.e the amount of heat energy / the level of rain reliability). Despite the two factors above being intact, sometimes yields remain low.

When the nitrate content in the soil is low, the application of fertilizers is a remedy.

Different means are used to apply fertilizer into the soil.

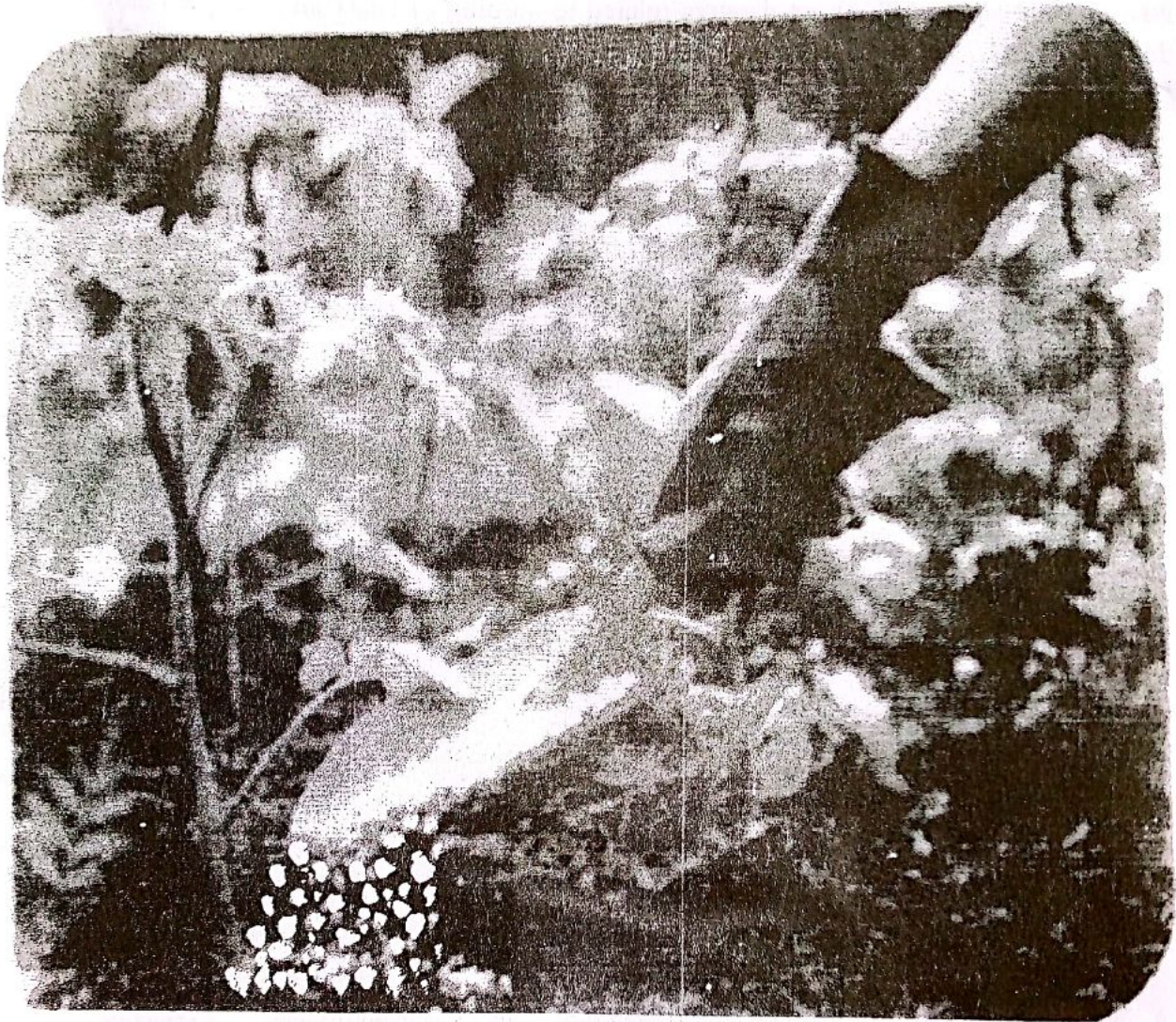
Firstly, dissolving fertilizers in water in which the resultant solution is extremely cold.

Secondly, keeping the fertilizers explodes with a lot of heat.

Basing on the two named behaviours of fertilizers (i.e releasing a lot of heat / gain a lot of coldness).

TASK

- (i) As a student who has deepened his / her knowledge on enthalpy changes during chemical reactions, come up with a document that differentiates between the two types of chemical reactions exhibited by the fertilizers. (05 mark)
- (ii) What other activities in life (chemical reactions) exhibit the same behaviours as fertilizers named in (i) above. Point out any five activities. (05 marks)



Item 6

Mabira Forest in Uganda has provided yet another most recent economic activity. Felling trees (cutting down of trees) for burning charcoal!

Deforestation for sustenance is illegal / a vice that needs quick condemnation.

Although the name practice above is bad and must be protested, many are able to gain income and provide for their families as they continuously gain profit.

TASK

As a young scientist who has loved nature and who prefers to conserve environment, prepare a report that you would share with the dwellers in Mabira, about other carbon – based fuels that they can resort to other than charcoal burning.

NB: In your report, talk about dangers related to burning of charcoal / dangers associated with deforestation. (10 marks)



Good – luck
Educare Provita