

Name:.....Stream:.....

Signature:.....Date: 18th/August/2023

545/1
Chemistry
Paper 1
(Theory)
Aug, 2023
2 hours

CHEMISTRY DEPARTMENT

Uganda Certificate for Lower Secondary Education

CHEMISTRY

Paper 1

THEORY

2 Hours

INSTRUCTIONS TO CANDIDATES:

Section **A** consists of **10** short scenario structured questions. Answer **all** the questions in this section. Answers to the questions should be written in the spaces provided.

Section **B** consists of **5** long scenario type questions. Answer any **4** questions from this section. Answers to these questions should be written in the answer booklet (s) provided.

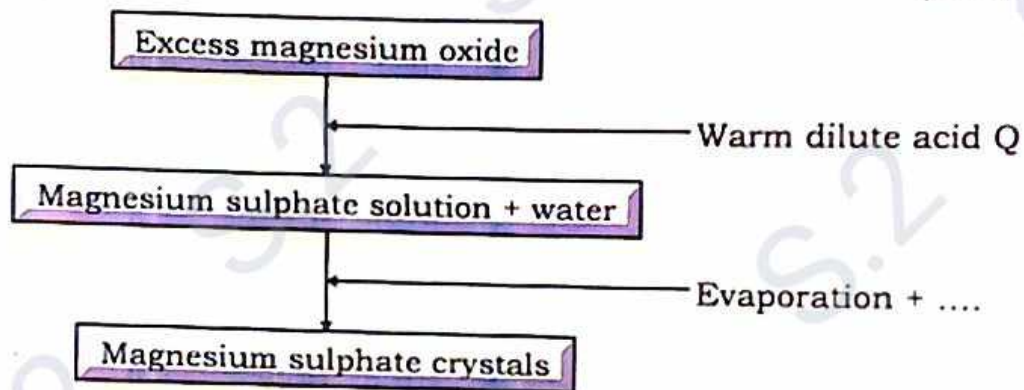
In both sections **all working** should be **clearly** shown.

Untidy work, **poor** handwriting will automatically lead to **loss** of marks.

For Examiners' Use Only															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

SECTION A (42 SCORES)Attempt **all** questions in this sectionAnswers to the questions **must** be written in the **spaces** provided

1. A senior one student was diagnosed with constipation and then prescribed for magnesium sulphate tablets to relieve his constipation, on reaching the pharmacy the drug was out of stock. He is now stuck. How can you help him prepare pure dry crystals of the tablet in the laboratory? Use the flow chart below as a guide. Equation **not** required (05 scores)



2. **Nabwire** heated iodine crystals in a boiling tube and later burnt pieces of paper in oxygen in order to find out the type of change undergone by each of the two substances.

a) State the type of change undergone by each of the two substances.

(i) Iodine (0½ score)

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(ii) Paper (0½ score)

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b) State **two** properties of the type of change undergone by paper

(02 scores)

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c) State any **two** applications of the type of change undergone by iodine in daily life (02 scores)

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3. *Accidents are unavoidable, a playful student started fire during a chemistry practical lesson that perplexed the entire school.*

a) Identify a safety tool that you would use to stop the spread of fire (01 score)

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b) Briefly explain why you would use the tool identified in (a)

(03 scores)

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4. In Uganda soil is normally formed by breakdown of rocks through physical, chemical and biological weathering as shown in the pictures below. Use the pictures to answer the questions that follow.



- (a) In simple terms state what is meant by the term weathering of rocks? (01 score)

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- (b) Briefly describe how the following can help in the breakdown of rocks to form a basis for soil.

- (i) Water (02 scores)

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- (ii) Wind. (02 scores)

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5. Diamond being one of the crystalline allotropes of carbon has a long and dazzling history; the most interesting one is that early men used diamond to create tools for hunting. Today, diamond is still a famous symbol of status and luxury. It is also used to make engagement rings and other jewelries.

a) State any **other** crystalline allotropes of carbon (01 score)

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b) Give a reason why diamond is used to make engagement rings (01 score)

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c) Why did early men use diamond to create tools for hunting (01 score)

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6. Mr. Chapman is a sugar-cane out grower at Lugazi. He has been continuously applying ammonium sulphate fertilizer to his sugar-cane plantation to improve on the yields. But of recent the yields have drastically reduced. When a soil sample from his plantation was analyzed, it was found out that the soil had a pH of 2.

a) Name any **one** substance used to determine the pH of the soil (01 score)

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b) Explain the advice you would give to Mr. Chapman to improve on his sugar-cane yields again. (03 scores)

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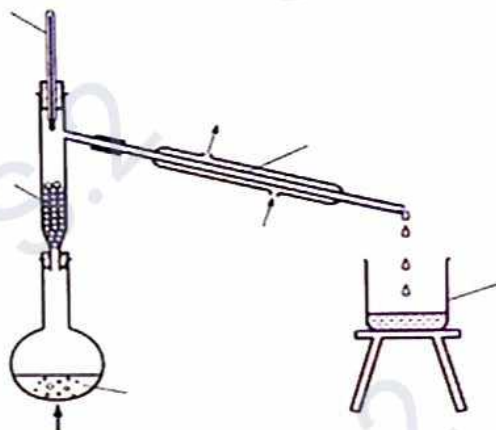
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7. **Sandra** went to buy paraffin and petrol from a petrol station, on her way back she found two fellow students coming from school. She decided to first put the paraffin and petrol down so that they can play. **Joan** the friend to **Sandra** accidentally added paraffin to petrol. A mixture was quickly formed that is **not** easy to be separated immediately. **Martha** and their fellow told them that she had an apparatus to separate the mixture but failed to remember its name and method used to separate that mixture. **Martha's** setup of the apparatus is given below. Use it to answer the questions that follow.



- i) Give **one** word that represents the mixture formed. (01 score)

- ii) Name the process of separation of a mixture that **Martha** thought about. (01 score)

- iii) Give a suitable reason as to why **Martha** decided to use the process mentioned in (ii) above. (01 score)

- iv) Outline **one** more example of a mixture separated by the above method. (01 score)

8. Explain the following observations by using the idea of particle theory of matter.

a) If you place a balloon over the top of a test tube that contains water and then you heat the water, the balloon inflates.

(02 scores)

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b) An inflated balloon from (a) eventually shrinks when left on a cemented floor for three days

(02 scores)

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9. *Iron is one of the commonly used metals after aluminium.*

a) Give the properties of iron which make it suitable for its use as

(i) School bell by Okadapau (01 score)

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(ii) Cloth hanger (01 score)

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b) At least every other year the school must replace the cloth hanging wires. Briefly explain why? (02 scores)

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10. An atom of an element **X** has 5 neutrons and atomic mass 9. Write down the;

a) electronic configuration of the atom of **X** (01 score)

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b) formula of the ion formed by **X** (01 score)

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c) (i) Identify the group of the periodic table to which atom **X** belongs in the periodic table. (01 score)

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(ii) Give a reason for your answer in (c) (i) (01 score)

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SECTION B (48 SCORES)

Answer **only four** questions in this section.

Answers to this section should be written in the answer **booklet (s)** provided.

Begin each question on a **fresh** page.

11. Most students are currently making phone calls to their guardians because they have run out of soap which is an essential chemical product in the life of any student. This is because they have been using a lot of soap in the process of washing while at Great Aubrey.

a) Identify the type (s) of water which they use for washing that consumes a lot of soap (02 scores)

b) Explain how the type of water you have identified in (a) is formed. Include relevant chemical equation (s) where necessary (04 scores)

c) As a chemistry student, explain to the entire fraternity of Great Aubrey how they can still use less amount of soap while washing using the same type of water identified in (a) (06 scores)

12. A bridge is being constructed in your community. Specific materials are being chosen for the use over others.



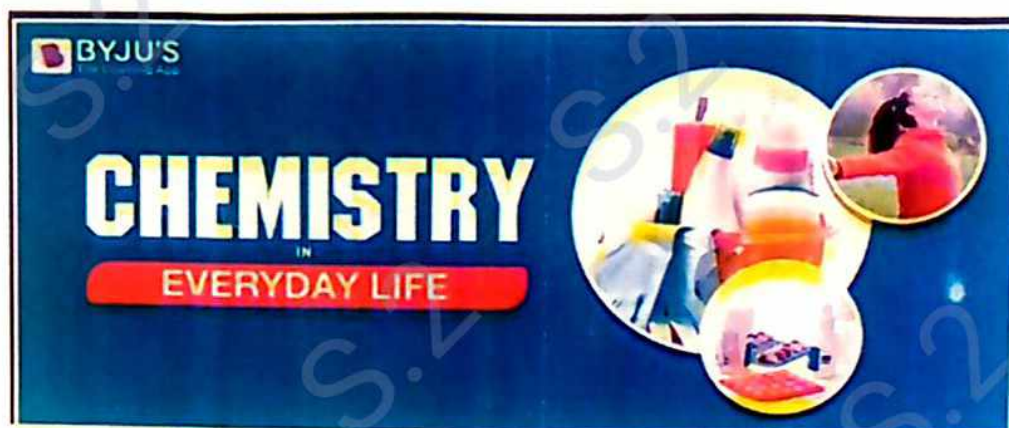
- a) Write an email to your friend in another community explaining to him/her the materials being used in the construction of the bridge justifying the necessity of each of the materials used (10 scores)
- b) Explain why in our daily life metals are chosen over plastics to be used for cooking (02 scores)
13. The government of Uganda under NEMA is against cutting down of trees and clearing swamps yet the biggest percentage depend on them for fuel.



Task:

- a) Write an essay explaining how people can alternatively survive with minimum practice (10 scores)
- b) Briefly explain the effect of bush burning on health of human beings (02 scores)

14. Assuming you got a visitor from the District Education Office going to inspect on the compliance of schools with new curriculum and student's achievements from the so far gained knowledge from the subjects.



Task:

Write a report to him about chemistry

(12 scores)

15. The ministry of health annual reports recorded that 60% of Ugandans fall sick on monthly basis, 40% of those who fall sick suffer from typhoid and 95% of the people who suffer from typhoid is attributed to unclean water



As a chemistry student write an essay explaining to the citizens on how to solve the unclean water problem. (12 scores)

END