



## **SHAPTA JOINT ASSESSMENT BOARD**

Uganda Certificate of Lower Secondary Education

**CHEMISTRY 2023**

**Paper 1**

2 hours

### **INSTRUCTIONS TO LEARNERS**

- Attempt all the Items in this paper.
- All answers should be written in the spaces provided

1. Large deposits of oil have been discovered in Lake Albert near Hoima city. Crude oil contains a variety of different compounds but with similar structure. The simplest of these compounds is methane of molecular formula  $\text{CH}_4$  and many others.

a) Identify the class and write the general molecular formula of the organic family to which the components of oil belong (02 scores)

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b) Name and write the structural formula of the next two members of the organic family named after methane (02 scores)

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c) Giving a reason for your answer, state one method by which the components of crude oil. (2 scores)

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2. Kiseka loves drinking rain water because he believes it is pure water as he gets directly from the sky. However Brenda has continuously advised him to stop taking it and instead drink water from the borehole which is hard water.

a) Why do you think Brenda advises Kiseka to drink hard water? (02 scores)

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b) When hard water is used to wash clothes more soap is required while less soap is required if rain water is used. Briefly explain this observation. (03 scores)

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3. In a certain school, the latrine is near senior one class. The foul smell disturbs the students in the class and the smell becomes much more on the hot day.

a) Explain briefly how the smell molecules are able to move from the latrine up to the classroom. (02 scores)

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b) Explain why the smell from the latrine become much more during the hot day. (03 scores)

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4. Okello heated iron (III) chloride and copper (II) carbonate in two separate boiling tubes to find out the type of change undergone by each of the two substances. (06 scores)

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

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b) State two properties of the type of change undergone by iron (III) chloride

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c) State any two applications of the type of change undergone by copper (II) carbonate in daily life

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5. Aluminum being one of the first 20 elements of the periodic table when mixed with other substances produces an alloy that is usually used to make saucepans.

a) State any two reasons why Aluminum when mixed with other substances is suitable for making saucepans (02 scores)

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b) Heated Aluminium reacts Oxygen gas to form an Oxide X.

i) Write the chemical Formular of the oxide X. (01 score)

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ii) State the type of bonding that exists in the oxide X. (01 score)

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iii) Suggest three physical properties that would be possessed by the oxide X.

(03 scores)

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6. Salts are very important in our everyday lives as some of them are used in medicines, add taste to our food. Many of these salts can be prepared in the laboratory.

a) Suggest three ways in which salts can be prepared in the laboratory.

(03 scores)

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b) Ammonium chloride is an example of the salts prepared from the laboratory. When it was dissolved in water and the solution tested, it was found to be acidic. Explain why the solution was acidic. (02 scores)

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c) State three other applications of salts in your community. (03 scores)

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8. For each of the following materials, state the best materials that can be used for its manufacture and give reasons for your choice (04 scores)

a) A tea pot

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b) Mineral water bottle

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c) Electrical wires

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d) A blanket

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9. Sodium and magnesium are elements in the periodic table. These elements belong to different groups of the periodic table indicating that they have different chemical properties.

a) Using their reaction with water, indicate their difference in chemical properties.

(03scores)

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b) Write the equations of reaction between the elements and water. (03 scores)

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**END**