

Candidate's
Name.....

Signature.....

CHEMISTRY

2 hours

JINJA PROGRESSIVE ACADEMY, JIPRA.

Uganda Advanced Certificate of Education

SENIOR FIVE CHEMISTRY

END OF TERM I 2025

(Principal Subject)

INSTRUCTIONSTOCANDIDATES:

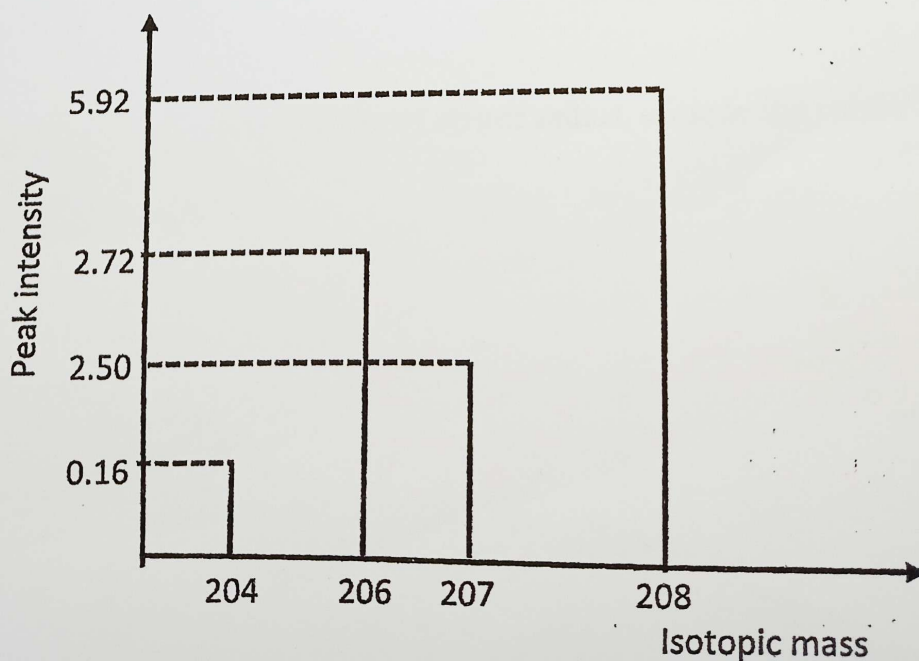
This paper consists of three compulsory questions.

Mathematical tables (3 – figure tables) are adequate or non-programmable scientific electronic calculators maybe used

No candidate will be allowed to use any reference Books

ITEM 1

The national environmental authority (NEMA) has received complaints of water pollution from a certain village in Namayingo district. The experts from NEMA established that the water pollution was related to metal extraction activity in the area, water samples were collected and sent to the laboratory for analysis using a mass spectrometer so as to determine the actual metal causing the pollution. The mass spectrum below was obtained;



Task

- a) As a chemistry learner, explain how the mass spectrum was obtained.
- b) Help someone interpret the mass spectrum and identify the element polluting the water

ITEM 2

A student is investigating the properties of a series of organic compounds in a laboratory. They are three bottles labelled as GA1, GA2 and GA3, each containing a different liquid sample. Through initial tests, the student is able to determine that all the three compounds contain only carbon and hydrogen and belong to the same homologous series.

- a) Define the term "homologous series" and state the different properties that were exhibited by the compounds for the student to conclude that all the three compounds under investigation belong to the same homologous series.
- b) In another analysis of the samples, it was found that the liquid GA1 was saturated (contained only single bond in its structure). Liquids GA2 and GA3 were unsaturated (contained multiple bonds in the molecular structures). Describe how the bonds in the samples are formed.

ITEM 3

In an external seminar held at Jinja progressive secondary school, a candidate of Jinja college discussed the concept of atomic radius.

In his discussion, he stated that atomic radius increases across the period and decreases down the group.

Task

As student who has been taught the concept of atomic radius, critique the candidate's submission