

**ST. KIZITO KATIKAMU-KISULE SECONDARY SCHOOL**

**S.5 CHEMISTRY**

**TEST**

**Attempt all items**

Item 1

In 2024, a sample of organic material were discovered in an archeological site, after making scientific investigations on it, analysis showed that the organic material is the remain of extinct animal, saber toothed tiger and it contains a small sample of carbon-14.

Further analysis are shown in the table below.

|   |      |
|---|------|
| Initial activity of saber tooth tiger sample (counts/minute)            | 750  |
| Activity of saber tooth tiger sample after sometime (t) (counts/minute) | 410  |
| Half-life of sample of saber tooth tiger (years)                        | 5730 |

The archeologists where interested in knowing the age of the sample of the saber-tooth tiger and the year this animal dies so that they can trace the period when these animals are alive and their period of extinction.

Task

As a chemist;

- (a) Explain the process the archeologists went through during the scientific investigation to come out with the analytic date in the table above.

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- (b) Help the archeologists to know the age of the sample of saber tooth tiger and the year this organism dies.

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(b)(i) Assess the type of radioactivity undergone by the element above.

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(b)(ii) Explain the difference between the main particles emitted during the process above.

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**END**