Name:.....

Signature:.....School:.....

553/2
BIOLOGY
Paper 2
Jul/Aug.2024
2½ hours

UGANDA TEACHERS' EDUCATION CONSULT (UTEC)

Uganda Certificate of Education

BIOLOGY

Paper 2

Practical

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of **two** examination *items. Answer* **all** *the items in the spaces provided.*

Drawings should be made in the spaces provided. Use **sharp pencils** *for your drawings. Coloured pencils or crayons should* **not** *be used.*

No additional sheets of writing paper are to be inserted in the booklet.

Work on additional sheets will **not** *be scored.*

Item 1

Both Toka and Yami purchase vegetables like amaranthus and spinach from a distant farm and sell them in the market. Due to the long distance between the farm and the market, they both buy enough vegetables and preserve them for 3 days before going back to purchase more vegetables. The farmers harvest the vegetables by cutting their stems. Toka preserves her vegetables in soaking them in fresh tap water (A) while Yami soaks her vegetable sin salty borehole water (B).

Task

(a) Carry out a scientific investigation to explain the effects of each criteria of preserving the vegetables in the different samples for 30 minutes.

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(b) Identify the biological process investigated in the scenario.

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(c) Explain the effect of each preservation method and its impact on each lady's business.

(i) Toka's vegetable.

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(ii) Yami's vegetables.

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(d) Explain two importances of the process to the plants.

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Item 2

The student kept his suitcase with the school warden but when he returned back from the holiday, he opened his suitcase and his property inside the suitcase had been destroyed by some organisms. He checked the suitcase and found some of the organisms that had caused the damages hiding inside the suitcase.

Examine specimens **X** and **Y** and choose the organism that was responsible for damaging the property and then use it to attempt the tasks that follow.

Tasks

(a) Using described observable features, on the organism, describe and explain how the identified organism was able to destroy the property.

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(b) Using observable features, describe any six(6) adaptations of the organism for survival in the environment.

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(c) State the economic importances of the organism in the environment.

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(d) In the space provided, make a well labeled drawing of the hind leg of the specimen **X** and indicate your magnification.

END

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BIOLOGY

(PRACTICAL INSTRUCTIONS)

553/2 Inst. Sch.

Paper 2

CONFIDENTIAL

This information is given only to facilitate preparation of examination. Great care should be taken that the information given below does not reach the candidates either directly or indirectly.

INSTRUCTIONS FOR PREPARING SPECIMENS AND APPARATUS:

The teacher responsible for preparing specimens must ensure that candidates are provided with correct specimens and other materials as specified in these instructions. Specimens and solutions which have been assigned codes should be presented to candidates using those **codes only** and not any other identity. The head teacher **must** ensure that the teacher responsible for preparing the specimens hands in his/her trial results for the physiology/biochemistry question, properly sealed in a separate envelope and **firmly** fastened (attached) to the candidates' script envelope(s).

Turn Over

Each candidate should be provided with the following:-

- 20mls of distilled water = solution **A**
- 20 m/s of 60% salt concentration = solution **B**
- Mature freshly killed cockroach = specimen **X**
- Mature freshly killed housefly = specimen **Y**
- Young fresh amaranthus plant with atleast 2 nodes = specimen **N**
    - Thermometers
    - 20m/s measuring cylinder
    - Razor blade
    - Petri dishes
    - 2 beakers
    - 4 test tubes
    - Hand lens
    - Stop clock
    - Common laboratory reagents

END