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BIOLOGY
(Theory)
Paper 1
June/July 2024
2½ hours

UTEB
United Teachers' Education Bureau

UNITED TEACHERS' EDUCATION BUREAU
MOCK EXAMINATIONS
Uganda Certificate of Education

BIOLOGY
(THEORY)

Paper 1

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of **seven** *examination items. It has* **two** *sections;* **A** *and* **B**.

Section **A** *has* **three** *compulsory items.*

Section **B** *has two Parts ;* **I** *and* **II**. *Answer* **one** *item from each part.*

Answer **five** *items in all.*

Any additional item(s) answered will not be scored.

SECTION A

Item 1.

On his way back home from drinking, Kamau ran into the neighbour's compound and knocked hard on their door crying for rescue, breathing heavily with a fractured leg and narrated to them how he was chased by a lion. They laughed it off since there are no lions in the city centre of Kampala.

Task:

(a) Make a write up explaining how Kamau's body could have reacted and how he eventually found himself on the neighbour's compound.

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(b) Write a message highlighting why and how the youth of today avoid associating themselves with the character of Kamau.

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Item 2.

Ali planted beans in his garden having mature sugar canes. Just before the beans could flower, a heavy hailstorm hit the garden and all his crops were destroyed. After a month, Ali was surprised to see that there were new young sugarcanes growing but no new beans were growing.

Task:

(a) Identify the plant structures affected by the hailstorm.

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(b) Explain how the hailstorm affected the normal functioning of the crops.

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(c) Explain why Ali did not have to worry about his sugarcanes, but instead get worried about beans.

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Item 3.

John, a 13-year-old was experiencing general body weakness and was scared that he may not participate in the school interhouse athletics competitions. He was advised to first eat before engaging in any sports activities which he did take a meal of posho and beans. After resting for about an hour, he felt stronger and managed to even win his race. However, after the competition, John experienced deep breathing and muscle pain causing him to walk with a lot of difficulty.

Task:

Describe the process that led to the success of John and why he experienced deep breathing and difficulties in walking there after.

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This section has two parts; I and II

Part I

Answer **one** *item from this part.*

Item 4.

Mark, whose farm is located in a village on the hills of Sironko grows crops and is worried after a heavy rain washed away part of the soil in his garden along with some crops down into the river. Other plants were left with their roots exposed. Mark largely depends on farming and a natural environment for energy sources like firewood, burning charcoal for home use and sale. The district Environment Officer blames Mark for the problems he is facing. Mark wishes to understand how he is responsible for the problems so as to solve the problem without moving away from his ancestral land.

Task:

Help Mark understand the problems caused by his activities and the natural resources affected and advise him on how to live in the same place without causing much harm to the environment. Also highlighting why is it important for him to conserve the environment.

Item 5.

Plants provide one of the most diverse environments for organisms on earth. Unfortunately, they are facing threats due to various factors, causing their populations to reduce at an alarming rate. As a result, the delicate balance of the environment is disturbed, posing a significant challenge to variety of living organisms dependent on the plants and the sustainability of natural resources.

Task.

Explain how possible threat factors to organisms in scenario affect long-term survival of variety of living organisms and the natural resources and provide solutions to ensure environment stability.   *(15 scores)*

Part II

Answer one item from this part.

Item 6.

The government of Uganda plans to roll out a program to fight malnutrition in communities around the country. They are to give free seeds to households to grow their own food but, however, they are first to send a team of scientists to those selected communities to study the topography and the soil properties and develop guidelines to both the farmers and the government on what to do to minimize seed loss and wastage. Two teams were each sent to two different locations; Amolatar district where the land is generally flat with clay-like soils with long dry spells and Kigezi region where the land is hilly and raining throughout the year.

Task:

Assuming you were coordinating both teams, write a report explaining the different challenges likely to be faced by farmers in those districts. What can be done to minimize the possible challenges and why.

Item 7.

Makerere-Kikoni is a slum area in Kampala district and has residents from two living economic standards i.e the rich and the poor.

The slum has one community health centre III, which has a routine health camp every first monday of the month to check on the health status of especially community children. During one of the health camps, data was collected about a number of children who visited the health centre and given to their parents but did not know how to interpret the data.
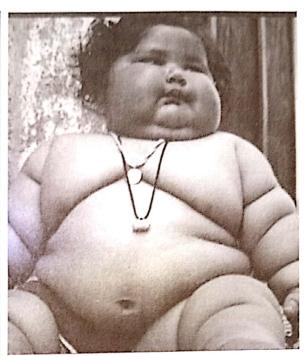
Below is an extract of the data collected about the two children assessed.

Child A	Child B
Body weight = 1.3kg	Body weight = 18kg
Body height = 0.916m	Body height = 0.22m
Sores on the body	Has ox-bow legs
Muscle wasting	High ventilation rate

Support materials

Child A   Child B

Figure 4: *Showing child A and B*

Standard BNI chart

<18.5	Under weight
18.5 to 24.9	Normal/ideal weight
25 to 30	Over weight
30 to 35	Obese
>35	Gross obesity

Task:

Analyse the data from the health workers and explain to the parents what is causing such date in their children. Suggest nutritional remedies for the two children that their parents can undertake and of what importance is it to have a balanced diet.   *(15 scores)*

END