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Random No.						Personal No.		

553/1

BIOLOGY

Paper 1

Jul./Aug.2026

2½ hours

Total Weighted Score	
Initials	

BUGANDA EXAMINATIONS COUNCIL

Uganda Certificate of Education

Biology Paper 1 (Theory)

2 Hours 30 Minutes

Instructions to candidates

1. This paper consists of two sections, A and B. It has seven examination items.
2. Section A has **three compulsory** items.
3. Section B has **two** parts, **I** and **II**. Respond to only one item from each part.
4. Responses to section A **must** be written in the spaces provided while responses to section B **must** be written in the answer booklet(s) provided.
5. Respond to five items in total, and indicate the items attempted in the table below.
6. **Any additional item(s)** responded to will not be scored.
7. Start the response to each item from section B on a fresh page of the answer booklet.

For scorer's use only

Item	1		2		3		4/5		6/7		Total
Basic code	PU	PA	CU	CA	RU	RA	EU	EA	MU	MA	
Score											
Initials											

SECTION A

Respond to **all items** in this section in the space provided

Item 1

During heavy rainfall in Butaleja district, Philbert's vegetable garden was submerged by flood water for two weeks. During this period, he observed that the leaves of the plants turned yellow, and most stems became weak and bent. When he uprooted some plants, their roots were rotten.

When floods disappeared, the stems straightened, developed many adventitious roots at the stem base, and many new green leaves and many brightly coloured flowers. Philbert managed to get some good yield although lower than expected.

Task

- a) *Explain the causes of the observed changes in the vegetable plants when the garden became submerged by the flood water.*

<i>Basic Code</i>	<i>PU</i>
<i>Score</i>	

- b) *Explain how the;*

- i) *plants managed to behave the way they did when floods disappeared.*

ii) *behavior of the plants enabled them to produce some good yields when the floods disappeared.*

<i>Basic Code</i>	<i>PA</i>
<i>Score</i>	

Item 2

Ms. Amina, a 45-year-old woman reports experiencing persistent thirst, hunger and frequent urination. Lately, she has also noticed difficulty in seeing clearly especially in bright light, forgets recent conversations, also she breathes deeply and her heart starts to race every time her son picks up a quarrel with the wife in the adjacent bedroom.

Following medical examination, the doctor diagnosed her with a faulty pancreas, issues with the iris of her eyes, and her brain.

Task

a) (i) *Explain the causes of Ms. Amina's current health challenges.*

- (ii) *Describe how Amina's body coordinates to bring about her reaction whenever there is a quarrel between her son and the wife.*

<i>Basic Code</i>	<i>CU</i>
<i>Score</i>	

- b) *Suggest strategies to manage the woman's health challenges*

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

b) Advise Sarah on how she can take care of her child and also manage her current health status so as to ensure a better life.

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6

SECTION B

Part I

Respond to only one item from this part.

Responses should be written in the answer booklet(s) provided.

Item 4

In Oyam District, community members around the swampy area of Icemen Sub County have struggled for two seasons. Their cattle are weak and have lost weight, the fish catch in the swamp has reduced drastically, cases of Ebola among community members have also increased. The pasture in the communal grazing area has become scarce with large patches of bare soil. In the fields, maize and sorghum production has greatly reduced. At the same time, increased cases of diarrhea among children in the area have been recorded at health centers.

During a field visit, the health and agricultural officer observed that;

- ✓ Many farmers keep large herds of cattle on the small communal grazing land.
- ✓ Most households practice open defecation along water channels near the swamp.
- ✓ Fishermen use mosquito nets with small mesh sizes to catch fish.
- ✓ Hunters set traps in the nearby woodland, often killing snakes and birds.
- ✓ Community members also eat bush meat from small antelopes in the nearby rainforest.

The health and agricultural officer has attributed the challenges in the community to actions of the community members.

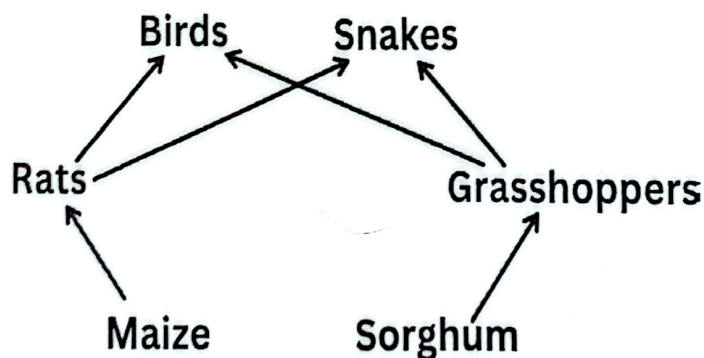


Fig1 above shows the feeding relationship among some of the organisms in the community.

Task

Explain

- a) *how the activities observed are causing the challenges experienced by the community.*
- b) *which measures should the community and local authorities take to reduce these challenges and restore balance in the ecosystem.*

Item 5

Residents of Busowoko village live near a small lake surrounded by a forest. The residents rely on the lake for clean water and fish, and the forest for medicinal herbs and wild fruits. They also rely on bees from the forest for pollination of their bean crops grown on large scale. The forest also harbors many endangered species of animals.

An investor cleared most part of forest to construct a timber processing industry, and the industry discharges untreated effluent directly into the lake. The residents and entire natural community are now faced with various challenges due to denial of the benefits they used to get from the area.

Task

- a) Explain the likely challenges experienced in the area as a result of investor's actions.
- b) Suggest the benefits of conserving the natural resources in the area.

Part II

Respond to only **one** item from this part.

Responses should be written in the answer booklet(s) provided.

Item 6

Joshua (blood group AB), got an accident in which he sustained a lot of injuries which resulted into severe bleeding, and also damage to his ribcage. His relative rushed him to the nearby hospital to save his life. On the way to the hospital, his relatives observed that bleeding stopped and some wound on the skin closed, he started breathing with difficulty and later became unconscious which worried his relatives.

At the hospital, the doctor carried out further examination and revealed that his pancreas and kidneys were damaged, and fluids had built up in the bruised lungs. The doctor recommended a blood transfusion alongside other medication. The hospital did not have blood but his relatives at the hospital were willing to donate blood to Joshua.

The doctors immediately checked the relatives' eligibility to donate blood to Joshua. The results obtained are as follows;

Relative at hospital	Age (years)	Weight(kg)	Blood group
Mother	46	70	B
Father (with HIV/AIDS)	50	79	A
Cousin	20	60	AB
Brother	9	29	O
Sister	20	38	AB

Task

a) Explain;

- i) the cause of the changes in Joshua's body as observed by his relatives on the way to the hospital.*
- ii) how the accident affected the normal functioning of Joshua's body as revealed by the doctor's medical examination at the hospital.*

b) With reasons, suggest which relatives should;

- i) be allowed to donate blood to Joshua.*
- ii) not be allowed to donate blood to Joshua.*

Item 7

Samuel and Daniel are both good sportsmen despite Daniel being HIV positive and an active smoker. In preparation for the upcoming athletic competition, Samuel visited a nutritionist who provided him with nutrient rich diet containing glucose, amino acids and vitamin C from citrus fruits which he fed on for the remaining periods. Meanwhile, Daniel continued with his usual carbohydrate diet only. Both of them maintained their normal daily training routine.

During the race, Daniel experienced shortness of breath, severe muscle pain and produced a lot of sweat. Samuel emerged the winner while Daniel collapsed and was taken to nearby medical center. At the medical center, it was also noted that Daniel passes out small quantities of dark urine, and the number of his CD4 cells (white blood cells) were greatly reduced below normal.

Task

- a) (i) Describe how Samuel's body processed the nutrient rich diet he fed on to enable him emerge as winner.**
- (ii) Explain causes of Daniel's conditions during the race and at the medical center.**
- b) With reasons, suggest how Daniel can overcome his challenges in order to improve his performance.**

END