

Name of student..... stream.....

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553/1

BIOLOGY

Paper 1

Theory

May 2025

$2\frac{1}{2}$  Hours

## BRISTLE RESOURCEFUL EXAMINATION

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**.
2. Section **A** has **three compulsory** items and **four** items in section **B**.
3. Answer **ALL** items in section A and **two** items in section **B**, **one** from each part.
4. Any additional item attempted will not be scored.
5. Start each question on a fresh page in the answer booklet provided.
6. Indicate the item attempted in section B in the table below.

### FOR EXAMINER'S USE ONLY

| Score | 1 | 2 | 3 |  |  | Total |
|-------|---|---|---|--|--|-------|
| Score |   |   |   |  |  |       |

## SECTION A

***Attempt all items in this section in the space provided***

1. Mr. Joseph is a qualified herbalist in Wakiso district. He obtains herbal medicine from different plant structures in the nearby forest either by plucking off leaves, digging out roots, removing bark of trees or uprooting out the plant. Despite some plants regenerating their barks, forming more leaf buds and some cells near the damaged roots differentiating into meristematic tissues, the number of medicinal plants in the locality has greatly reduced, and this has raised a lot of concerns.

**a) State the plant processes affected by Joseph's poor harvesting methods.**

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- b) Describe how the actions of Mr. Joseph affected the normal functioning of the medicinal plants leading reduction in their number.**

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- c) How are some of the medicinal plants able to survive despite the poor harvesting methods of Mr. Joseph.

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2. A 60-year-old woman spends most of her time in her dark room using a phone with brightly lit blue screen, and frequently takes overdose of her hypertension tablets. Recently, she experiences painful walking, blurry vision and difficulty in seeing objects not close to her. One day while cooking milk for her granddaughter, she suddenly saw the boiling milk spilling out of the saucepan into the fire. Upon touching the sauce pan, she immediately released it.

- a) How did the old woman's body coordinate from the time she saw the milk spilling into the fire?

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**b) Explain the causes of the health challenges experience by the old woman.**

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**c) How can the old woman overcome her health challenges to live a better life.**

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**3. Mary a university student became pregnant after engaging in multiple sexual relationships occasionally having unprotected sex. Since she became pregnant upto when she gave birth, Mary refused to visit any hospital for antenatal care. When she gave birth, Mary refused to breast feed the baby. Mary's child now frequently falls sick, has low body size and weight, and shows retarded mental and body growth, and also has HIV/AIDS. Mary's child also has a flat face, short neck, and squat hands due to a condition the doctor revealed to be genetic.**

**a)** Explain how Mary's behaviour during and after birth affected her child.

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**b)** Explain how the genetic condition of Mary's child comes about (arose).

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**b)** Explain to Mary how she can manage the health issues of her child to ensure that her child lives a better life.

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## **SECTION B**

### **Part I**

#### **Attempt one item from this section**

4. As a result of a civil war in the neighbouring country, many people entered into Uganda as refugees. The local authorities decided to settle them on a piece of land, part of which was a forest reserve next to a swamp and a river. Due to large influx of people running away from the war, the trees in the forest reserve and around the riverbank were cleared to expand the camp. A lot of human wastes and polyethene bags were disposed into the river, people also constantly burnt plastics and wood for charcoal. This resulted into respiratory diseases, outbreak of dysentery, flooding in the camp and loss of biodiversity.

#### ***Task***

- a) Explain how the environmental challenges in the area came about.
  - b) Explain to the local authorities why it was important to conserve the environment.
5. The shores of Lake Victoria are highly populated especially near urban center, people in the area carryout overfishing, commercial crop growing, sand and clay mining along the shores. Foreign investors have also constructed industries along the shores. This has resulted into a number of challenges to the people living around the shores of Lake Victoria.

#### ***Task***

- a) Explain to the people the causes of the challenges experienced in the areas.
- b) Explain how these challenges can be solved.

### **Part II**

#### ***Attempt one item from this part***

6. A man was attacked and beaten severely by a group of thugs. Unfortunately, he sustained several physical injuries leading to severe bleeding, and lost most of his teeth. Since then, he has presented a number of health complications such as swelling especially in legs, dizziness, body weakness, weight loss and diarrhea. In the hospital further examination using a scan revealed that his pancreas and kidney were severely damaged, which has made him worried about his life. While in hospital, the doctors recommended to feed him on small quantities of glucose solution, juice from citrus fruits blended with green vegetables, blood transfusion and regular dialysis alongside other medications.

### Task

- a) Explain how the actions of the thugs affected the functioning of the man's body.
  - b) Describe how the doctor's recommendations enabled the man's body to return to normal state and functioning.
7. Kadero, a 40-year-old woman has been a heavy smoker for over 10 years. Lately she has been experiencing high blood pressure, extreme headache and dizziness, and yellowing of teeth and difficulty in chewing. She also experienced a miscarriage at 7 months of her pregnancy. Although the baby boy survived, he had extremely low body weight and looked under developed for the age.
  - a) Explain to Kadero the causes of the health challenges experience by herself and her baby.
  - b) Advise her on how to manage the health challenges for both herself and baby to live a better life.

# Answer sheet

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**END**

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