Candidate's Name: .....

Signature: .....

Random No.						Personal No.		

(Do not write your School/Centre Name or Number anywhere on this Booklet.)

553/1
BIOLOGY
Paper 1
(Theory)
Oct./Nov. 2025
2 ½ hours

For Scorers' Use Only

Total Weighted Score		
Initials		

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

INSTRUCTIONS TO CANDIDATES:

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

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

Responses to Section **A must** *be written in the spaces provided.*

Section **B** *has* **two** *parts;* **I** *and* **II.** *Respond to* **one** *item from each part.*

Responses to Section **B must** *be written in the answer booklet(s) provided.*

Responses to each item in Section **B** *should start on a fresh page.*

Respond to **five** *items in all.*

Any additional item(s) responded to will **not** *be scored.*

For Scorers' Use Only

Item No.	Basis Code	Weighted Score	Scorers' Initials
1	PU		
	PA		
2	CU		
	CA		
3	RU		
	RA		
___(4/5)	EU		
	EA		
___(6/7)	MU		
	MA		
Total Weighted Score			

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Turn Over

SECTION A

Respond to **all** *the items in this section in the spaces provided.*

Item 1

A farmer planted crops in a well prepared garden. Before flowering, the plants were attacked by some insect larvae which destroyed most of the young leaves, terminal buds and the outer layer of the stems. The farmer noticed that the plants had become stunted as they were not growing at the expected rate.

After some time, the larvae disappeared and the plants resumed growing, produced many branches, leaves, flowers and fruits to the surprise of the farmer. At the time of harvest, the farmer was able to get some yields.

Task:

(a) Explain the effects of the insect larvae on the plants.

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Basis Code	PU
Score	

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(b) Explain how the plants managed to behave the way they did when the insect larvae disappeared.

For Scorer's Use Only

Basis Code	PA
Score	

Item 2

A 60-year-old woman who was a smoker complained of persistent joint pains and backache that made her walk with difficulty. She could not easily read the small words of the Bible as she used to. Her children took her for medical examination in a hospital.

During medical examination, as the doctor flashed torch light in her eyes, she kept blinking. On further examination, the doctor noted that she had a problem with her eye lens, and the distance between the cornea and retina was shorter than expected. She also had weak bones.

Task:

(a) (i) Explain why the old woman could not easily read the small words in her Bible.

(ii) Describe how the response by the old woman's eyes to the doctor's medical examination was brought about.

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Basis Code	CU
Score	

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(b) Advise the old woman on how she can manage the health condition that made her walk with difficulty.

For Scorer's Use Only

Basis Code	CA
Score	

Item 3

A farmer grows red and white flowers for sale. One day, a friend told him that pink flowers were more on demand. He was advised to cross-pollinate his pure breeding dominant red flowered plants with pure breeding recessive white flowered plants, which he did. To his surprise, all the flowers were red and none was pink. He is now worried that he has lost his variety of white flowers. He needs your help.

Task:
Using genetic diagrams, explain to the farmer;
(a) why he did not get pink flowers.

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Basis Code	RU
Score	

(b) that he can still get the white flowers in the second generation.

For Scorer's Use Only

Basis Code	PA
Score	

SECTION B

Part I

Respond to only **one** *item from this part.*
Responses should be written in the answer booklet(s) provided.

Item 4

Residents of Ilodo village used to dump their domestic wastes in the nearby Ilodo swamp. The fresh vegetation of the swamp together with the dumped wastes allowed interactions of different living things.

An investor filled part of the swamp with murram (red soil) and constructed a factory. The factory directs its wastes into the stream in the swamp. The residents and the entire natural community of organisms no longer enjoy the benefits of the swamp.

Task:

(a) Explain how the investor's actions denied the environment and the residents the benefits they used to get from the swamp.

(b) Suggest the importance of conserving such areas described in the scenario.

Item 5

Residents of a village near a National Park depend mainly on wood fuel and food from the Park. Water from the village swamps flows into the river that runs through the National Park. The residents always wash their clothes, relax and swim in the river and the swamps.

The Park authority made observations about some animals as shown in table **1**.

Table 1

Animal	Number in the year	
	2020	2024
Antelope	3,990	2,000
Hyena	102	62
Lion	69	120

The animals live naturally in the Park without any artificial control of their numbers and there is no migration.

Data from the local health centre indicates that most homes in the village lack pit latrines or toilets. There are also increased cases of snake bites, sleeping sickness and bilharzia.

Task:

(a) Explain the observations from;
  (i) the park authority.
  (ii) local health centre.

(b) Explain measures the residents should take to reduce the challenges reported at the health centre.

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Part II

Respond to only **one** *item from this part.*
Responses should be written in the answer booklet(s) provided.

Item 6

Jayden, a 3-year old boy of blood group **B** was weaned at 2 years. Since weaning, he has been feeding majorly on rice and cassava.

Whenever he gets injured, he always takes long to get healed. Jayden's medical records indicate that he frequently suffers from infections and cough. He also has reddish hair and scaly skin. Due to these conditions, his mother prefers to keep him indoors especially in the morning and only brings him out after 11:00 a.m. when the day is warm.

Jayden became so weak and the mother took him to hospital. At the hospital, it was also noted that he passes out an abnormally small volume of yellow urine, was severely anaemic and with weak bones. Jayden was recommended for a blood transfusion but the only safe blood available in the hospital was of group **A**. The mother wondered why the hospital could not carry out transfusion using the available blood.

Task:

(a) (i) Explain the causes of Jayden's health condition.
(ii) Suggest what can be done to improve Jayden's health condition without taking him to hospital.

(b) Explain to Jayden's mother why the available blood could not be given to Jayden.

Item 7

A 42-year old school bursar enjoys a lot of fatty foods and sugary drinks and also sits for long hours in office. He smokes one packet of cigarettes a day.
He experiences swelling of his feet and his teeth have turned brown. Lately, he experienced shortness of breath and general body weakness and was taken to the hospital for medical check-up. The medical results showed that the school bursar was overweight, had fat deposits in the coronary artery and also had some of his air sacs blocked. He was advised to start medical treatment.

Task:

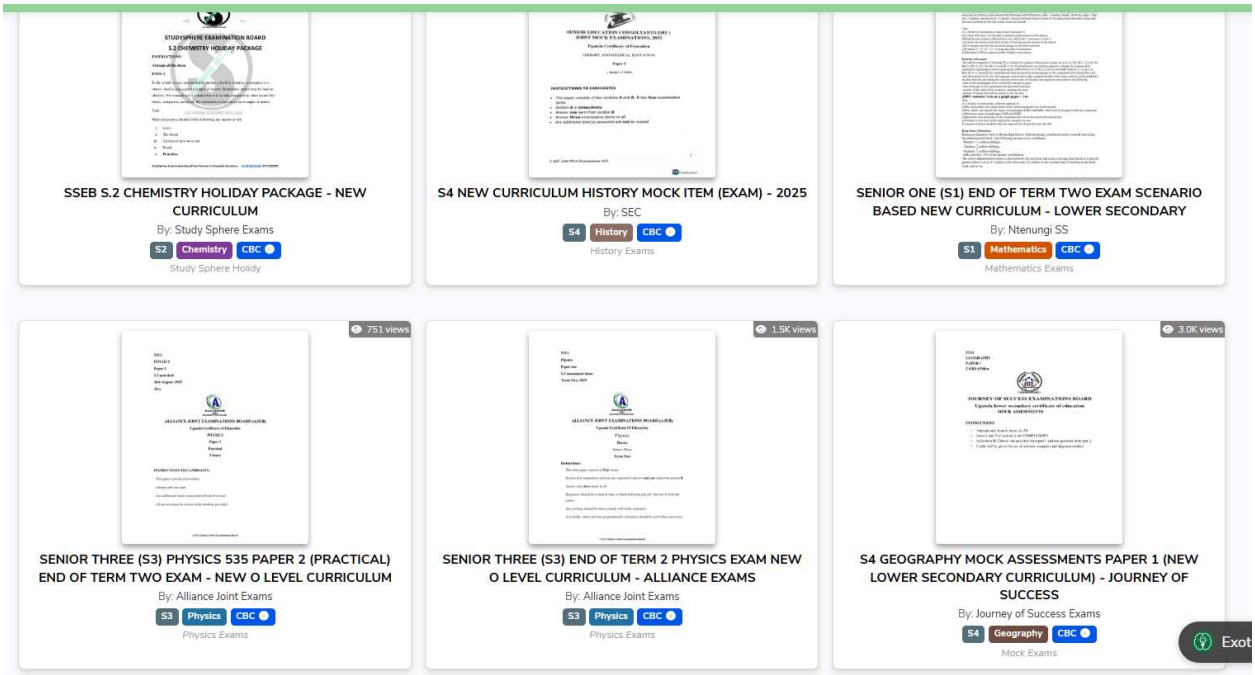
(a) Explain how the conditions experienced by the school bursar are as a result of his lifestyle.

(b) Explain how the school bursar can overcome the conditions in his body besides using medical treatment.

END

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