Candidate's Name: .....Signature: .....

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

553/1
BIOLOGY
Paper 1
April 2024

Random No.						Personal No.		

VISION FOR AFRICA HIGH SCHOOL NAKIFUMA

Uganda Certificate of Education

BIOLOGY

Paper 1 (Theory)

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.

Answer only ***one*** *item from this part. Answers should be written in the answer booklet(s) provided.*

SECTION A

Item 1

Mr. Imalingat is a farmer who grows crops. His wife is who works and lives with their children in Soroti town. Among the children are two daughters, one in primary five and a younger one in primary four. During the last rainy season his beans were doing very well. They were generally healthy with dark green leaves and brightly coloured flowers. When his family visited the farm, the daughters started plucking the brightly colored flowers off the bean plants and playing with them. When Mr. Imalingat saw them, he was furious with the daughters and quickly stopped them. He claimed that the beans which had lost flowers were not any more useful and would lead to loss.



Fig. 3 *shows Mr. Imalingat's daughter playing with a flower.*

Task

(a) State 2 plant processes that were being protected by Mr. Imalingat. (02 marks)

.....

.....

(b) Would you support Mr. Imalingat's claim? Why? (06 marks)

.....

.....

.....

.....

.....

(c) What should he have done for the bean plants that had already lost the flowers? (02 marks)

.....

.....

Item 2.

Mr. Kwizera is a popular crop farmer in Kigezi sub region. Last year, there was a serious hailstorm that hit and destroyed his Irish potato garden at the time of tuber formation. After the hailstorm, the neighbors encouraged him to abandon the Irish potato garden and plant something else. However, some potato plants sprouted and continued growing. At the time of harvesting, the yields were poor



Fig. 1 *Shows Mr. Kwizera in his garden before it was destroyed by the hailstorm.*

Task

(a) Identify the potato plant organs affected by the hailstorm. (02 marks)

.....

.....

(b) Explain how the hailstorm affected the processes in the potato plants. (10 marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

(c) (c) Why were potato yields at the end poor despite the fact that some plants sprouted after the hailstorm? (03 marks)

.....

.....

.....

Item 3

Mr. Kajjubi is a fisherman on the shores of Lake Victoria. During the day, he engages in heavy drinking of alcohol at Kasenyi trading center. One evening as he was trying to cast his net he started shaking due to heavy drinking. Therefore, he could not successfully cast the net. He decided to leave the fishing that night and started rowing his boat back to the shore with much difficulty. At about 200 meters from the shore, he saw a fierce crocodile at a longer distance behind him. His heart started beating faster and his breathing rate increased. Luckily, he was able to row faster and escaped this danger.



Fig. 2 *Mr Kajjubi rowing his boat.*

Task

(a) Describe the coordination events that occurred in Mr. Kajjubi's body to bring about his reactions from the time he saw a crocodile up to when his rate of breathing increased. (08 marks)

.....

.....

.....

.....

.....

.....

(b) What are the likely effects of Mr. Kajjubi's lifestyle as described in the above scenario? (06 marks)

.....

.....

.....

.....

.....

(c) Suggest ways in which Mr. Kajjubi can change his lifestyle. (06 marks)

.....

.....

.....

.....

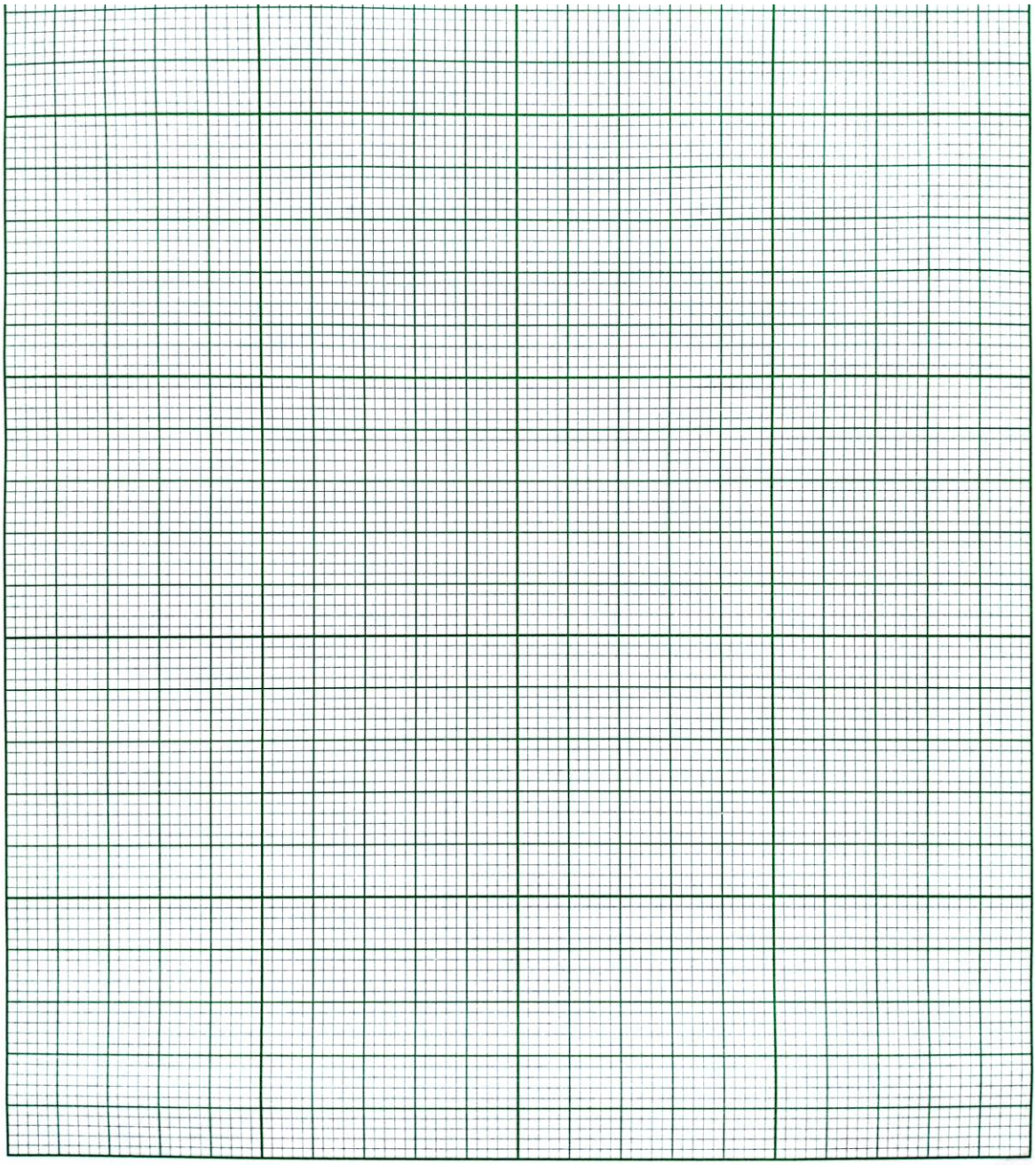
.....

Item 4

Anaerobic respiration is the breakdown of food to release energy in absence of oxygen. In this process the food is not completely broken down but part of it remains in form of alcohol in plants and lactic acid in animals. This process releases Carbon dioxide, energy and lactic acid in animals or ethanol in plants. The incomplete breakdown of food results into less energy released from the same amount of food. An investigation was carried out into the concentration of lactic acid in the Blood of a man before, during and after a vigorous exercise. The results are summarized belo

Time(minutes)	**Concentration of lactic acid(mg/100cm3)**
0	*14*
10	*80*
15	*95*
20	*70*
40	*35*
60	*22*
80	*18*

a) Plot the graph to show variation of lactic acid concentration with time below. (07 marks)



b) Where in the human body is lactic acid produced during the exercise? (01 mark)

.....

c) i)Describe the graph obtained above. (03 marks)

……

……

……

ii)Give reasons for the observed changes in concentration of lactic acid in blood. (04 marks)

……

……

……

……

SECTION B

Item 5

Last term as the school football team was preparing for the post primary football competitions, footballers ate food with a recommended amount of carbohydrates. They claimed that the food would give them the required strength during the game. After the first half of the game, these footballers were very tired, breathing rapidly and experienced muscle cramps. They rested for 15 minutes. When the second half started, the footballers were able to resume the play. Some school team supporters wondered how the footballers were able to regain strength and also win the match. Surprisingly, the footballers managed to walk back to school.

Task

Explain to the school team supporters the processes that the meal they ate went through to enable them win the match and how their regained the normal state to walk back to school. (20 marks)

Item 6

In a village in Eastern Uganda, swamps have been cleared for cattle farmlands and sand mining. The area environment officer organized a radio talk show on sustainable use of natural resources in swamps. Unfortunately, Mary a resident of the area only heard the concluding statement, "*From the presentation, I kindly request everybody to use our natural resources sustainably.*"

Task

Explain to Mary the environmental problems being addressed by the environment officer and how they can be solved. Explain why the village should conserve the natural resources in the swamps. (20 marks)

Item 7

Overpopulation is often one of the major causes of poverty. The united nations predicted that the poorest countries in the world are the biggest contributors to population growth. Uganda is one of the poorest developing countries in the world. Some researchers have attributed the population rise in Uganda to high fertility rates of Ugandans. The latest statistics show that in 2024, the average fertility rate of Ugandans is 4.334 %. This means that on average, every woman during her reproductive age gives birth to over 4 children. It has been reported that both men and women have less interested themselves in ***birth control*** methods.

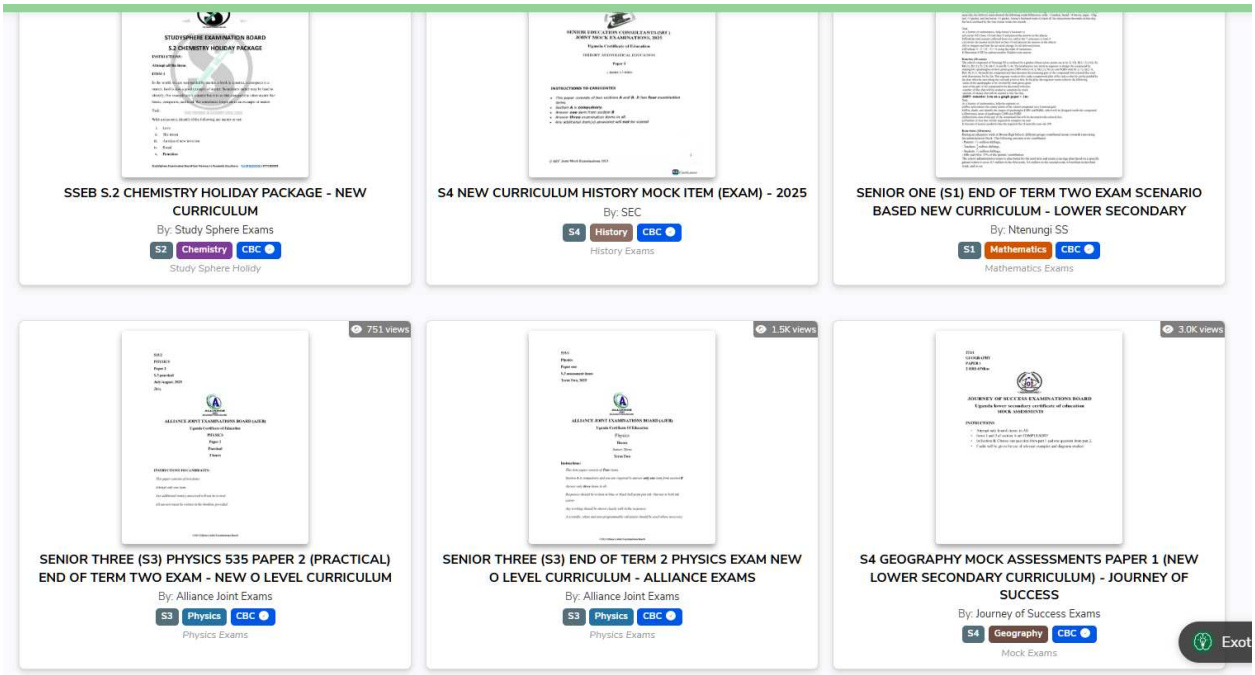
However, among the births that are recorded, an alarming number of babies dies before they are out of infant stage. The infant mortality rate statistics in Uganda show that in 2024 is at 38.015 deaths per 1000 live births. This has partly been due to ***poor care*** for the new born babies by the mothers as well as insufficient health services. The two problems above combined have a wide range of effects which range from household level to national level in terms of service delivery and general economic planning.

Task

Write an article to Ugandan families on how to tackle ***rapid population growth*** and ***high infant mortality rate***. (20 marks)

END

This document was downloaded from https://exoticnotes.com



Do you need more papers for secondary?

Click
https://exoticnotes.com/papers/secondary

If you need papers for O level (S.1 – S.4)

Click
https://exoticnotes.com/papers/secondary/o-level

If you need papers for A level (S.5 – S.6)

Click
https://exoticnotes.com/papers/secondary/a-level