

NAME:.....

SCHOOL..... SIGNATURE:.....

553/1
BIOLOGY
PAPER 1
(Theory)
November 2024
2½ hours



WAKISSHA JOINT EXAMINATIONS

Uganda Certificate of Education

End of Year Assessment

SENIOR THREE

BIOLOGY

Paper 1

(Theory)

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

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

*Sections A has **three** compulsory items. Responses to this section should be written in the spaces provided.*

*Section B has two Parts; I and II. Answer **one** item from each part. Responses to this section should be written in the answer booklet(s) / sheets provided.*

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

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

FOR EXAMINERS' USE ONLY				
SECTION		ITEM	SCORE(S)	EXAMINER'S SIGNATURE
A		1		
		2		
		3		
B	PART I	4		
		5		
	PART II	6		
		7		
TOTAL				

SECTION A

Answer **all** the items in this section in the spaces provided.

Item 1

Peter is a prominent farmer in Mayiga village, who supplies beans to business men in Owino market in Kampala. For five years he has been applying agro chemicals to ensure good harvest of beans every season, on his 20 acre land. However last season, his bean plants were attacked by a disease at the time of developing pods. He also noted yellowing of leaves of the beans. The events caused low yields which has affected his market demand. Peter is worried of the loss of his market.

Tasks

- (a) Explain how his practices have contributed to the low yield in the last season.

- (b) Explain how the disease impacted on the biological process in the bean plants.

- (c) Suggest to peter how he can improve on his yield in the next seasons.

Item 2

In MagaMaga village along Jinja- Iganga high way, the common economic activity is distillation of alcohol referred to as kasese, Lira Lira, Kalondo and waragi depending on the locality in the different parts of Uganda. On daily basis James wakes up every morning to go for drinking and returns home past mid night. James has yellow teeth, bleeding gums and has generally grown thin. On his way back one day he was knocked down by a speeding car and the scan showed that his pancreatic duct was damaged.

Tasks

- (a) Identify the organs / structures affected in James body due to his lifestyle.

- (b) Explain the processes which were affected due to James lifestyle.

This image shows a single sheet of white paper with horizontal blue or grey 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.

- (c) How can you advise James and Maga Maga community to live a better life?

Item 3

A four-year-old boy was feeling very hungry and chose to pick a piece of meat from a sauce pan which had just been removed from fire by the mother. On touching the hot meat, he immediately withdrew his hand, unfortunately soup splashed on his body causing a burn.

Tasks

(a) Identify the body organs that responded to the events.

(b) Explain how the body reacted to save him from further effects.

(c) Suggest the first aid you would give him to avoid further effects.

SECTION B

Part 1

Answer only one item from this part.

Item 4

House flies and mosquitoes are some of the common insects in Uganda. Imagine you have just completed a course of entomology and some of the insects you focused on were the two mentioned above. You have been invited to a workshop to take part in discussions.

Task

- Which information would you present to the researchers about these insects in relation to their habitats, behavior and effects to the environment?
- Explain why the said insects should be conserved.

Item 5

Mr. Tumwine is a prominent farmer, who has just acquired two pieces of land A and B. Land A is flat with clay soil and experiences dry spells, while land B is hilly and gets rain throughout the year. He is aware that you are a qualified soil scientist and has contracted you to study the topography and soil properties of the two pieces of land so that you guide him in his business to avoid seed losses and wastage.

Tasks

- Explain the different challenges he is likely to face in the two pieces of land A and B.
- Advise him on what he can do to minimize the challenges you have noted.

Part II

Answer only one item from this part.

Item 6

The table below shows data collected about two children from two families of different economic standards.

Child X	Child Y
Body weight = 12 kg	Body weight = 29 kg
Height = 0.8m	Height = 0.4 m
Sores on the body	Deformed legs
Muscle wasting.	Breathes heavily

Turn Over

The table below shows the body mass index (BMI)

BMI range	Weight classification
Less than 18.5	Under weight
18.5 – 24.9	Normal weight
25 – 29.9	Over weight
Greater than 30	Obese

Task:

- (a) Analyse the data and explain to the parents the cause of the challenges to their children.
- (b) Suggest nutritional remedies for the two children that their parents should undertake for betterment of their children.

Item 7

Alex has been smoking cigarettes, eating a lot of fatty meat and drinking fluids with high sugar content. Alex body mass index was found to be higher than normal.

He was advised to monitor his activity for one week. One day Alex tried to do physical exercise, experienced heavy breathing, painful muscle cramps and sweated a lot.

The following days Alex did not do physical exercises but still felt body fatigue, difficulty in breathing and chest pain.

Tasks:

- (a) Explain Alex's experiences on day one and the following days.
- (b) How can you advise Alex to manage what he experienced after day one?

END