

S 3 BIOLOGY

SECTION A

Attempt all items in this section.

Item 1

Deno planted banana plants, far from his home, which grew and developed large bunches of fruits. One day, when the bunches were still young, a strong wind fell many of his plants in the plantation without breaking the central stalk. On visiting the plantation after 4 days, Deno found when his fallen banana plant leaves had dried up. He is worried that the plants will therefore take long to be harvested.



Fallen banana plant

Task

a) Identify the plant organs that were affected by the wind.

b) Explain how the damage of the above organs resulted in to drying of the leaves and will cause delay in the maturing of the plant fruits.

[illegible]

collected his urine and tested for some components. The results were recorded in the table below together with the results of a normal person.

Component	Normal urine	Anthony's urine
Proteins	0.00	0.00
Glucose	0.00	0.01
Amino acids	0.00	0.00
Urea	2.00	2.00
Salts	1.50	2.10

Table. Urine of normal person and Anthony

Task

a) Mention the body organs that are affected by Anthony's diet.

b) Relate the damage of the above organs to the results in the table.

c) Which possible advice can you give to Anthony so that he can restore his normal functioning.

Item 3

Zziwa planted maize which a few days after flowering, a tree fell and hit many plants and were broken as shown in the figure below. Upon maturing and harvesting, Zziwa found damaged maize plants with very small cobs without grains, which reduced his food production.



Maize plants destroyed by tree

Task

a) Identify the life processes which were affected in the maize plants.

b) Explain how the damage of the Zziwa's maize plants reduced his harvests.

c) Suggest reasons why the maize cobs survived even when the plant was damaged.

SECTION B

*Attempt two (2) items from this section.
Present your responses on the answer sheets provided.*

PART 1

Attempt only one item from this part.

Item 4

Masindi district in central Uganda is well known for many residents engaging in charcoal burning. The farmers in this district claim that food production is very poor in the areas which are mostly experiencing the economic activity. That this has resulted in to various challenges within the population of the district.



Landscape of charcoal burning ground

Task

- Explain how the economic activity has resulted in to challenges that the population faces.
- Indicate the ways how to reduce on effects of the activity and the significance of conservation of natural resources in Masindi district.

Item 5

Mugisha bought a bushy piece of land for crop growth. He cleared the land and planted maize and beans which had wide market since he was selling them to

nearby schools and did not want to change to other crops. In every season, he applied artificial fertilizers and irrigated the garden in dry seasons to keep supplying the schools throughout the year. After 5 years, Mugisha's yields started to decline even after thorough irrigation and fertilizer application. He is not aware of the cause and is scared about the decrease in his income and family survival.

Task

- a) Explain how Mugisha's farming practices resulted in to reduced crop production.
- b) Advise Mugisha on how he can overcome the likely dangers of the reduced crop production.
- c) State why soil should be conserved.

Part 2

Choose one item from this part.

Item 6

Arnold has a daily meal of lean meat and chips which he knows that it should make his body grow healthily. He was concerned about his status and approached a doctor. He was diagnosed of ileitis disease which he had never heard of. The doctor told him that the disease is an inflammation of the ileum and caused by a bacterium. Arnold was also told that the disease causes intestinal hemorrhage (bleeding), diarrhea and that it is the one causing him to be weak and lose weight.

Task

- a) Explain how ileitis causes him to be weak and lose weight despite of his diet.
- b) Mention the various ways through which digestive disorders are prevented.

Item 7

Jessica used to run one kilometer with ease. When she started smoking, Jessica hardly runs this distance even after consuming enough posho. This has scared her career since she is now addicted to smoking. Her medical doctor collected her exhaled air in a clean container, analyzed and compared it with the exhaled air of a nonsmoker. The results of both individuals were presented in the table below. Jessica also complains of muscle aches, increased breathing and heart rates.

Component	Inspired air	Exhaled air	
		Nonsmoker	Jessica
Carbon dioxide	0.03	4	6
Oxygen	21	16	18
Carbon monoxide	0.5	2	15

Table. Composition of exhaled air of Jessica and non-smoker

Task

- Explain how Jessica's life style makes her hardly manage racing, feel aches and changes in breathing and heart rates.
- Suggest measures to enable Jessica continue with her career without hardships.

END