
BIO DEPT

INSTRUCTION: Attempt all items in the space provided.

Item 1

Peter planted bean seeds and yam corms on his piece of land located in a valley. Very few bean seeds developed into young plants and later, their leaves withered and fell off and the roots become rotten leading to death of many bean plants which later gave a very poor harvest due to stagnation of water in the soils.

However, the yam plants had adventitious roots near the soil surface, large air spaces in the stem and roots when cut and root tubers and were able to grow well and gave a good harvest.

Tasks

- a) Explain how the stagnation of water in the soils affected the different plant processes.

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- b) How did the yams manage to survive the conditions in the garden and later give a good harvest.

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Item 2



The image besides is of a resident of Kakeeto village who has been experiencing fatigue and difficulty in swallowing and breathing, when he went to the hospital, the doctor attributed the symptoms to the disorder she was suffering from. As she was moving out from the hospital, she smelled roasted meat and she salivated (volume of saliva in the mouth increased).

Tasks:

- a) Explain to her how the condition has caused the symptoms she is experiencing.

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- b) Explain how her body structures worked together leading to her reaction when she was moving out of the hospital.

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c) Suggest ways she can undertake to live a better life.

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Item 3

In the hilly area with scattered trees, farmers constantly dig up and down the hill to grow the crops, cut down the trees for charcoal and often graze large herds of their cattle on the hill and over years, they have grown only one maize season after season. During heavy rains, the area faces mudslides and flooding in the valleys and they also get reduced yields.

Residents attribute the challenges to the activities happening on the hill.

Tasks:

a) Explain how the each of the farmers action has resulted to the challenges faced during heavy rains in the valleys and in the changes in the levels of their yields.

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[illegible]

b) Show how the above challenges can be minimised.

[illegible]

Item 4

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.

Jayden's medical records indicate that he *has reddish hair and wasted muscles, frequently suffers from infections*, always *weak*, he passes out an abnormally *small volume of yellow urine*, severely *anaemic* and with *weak bones*.

One day at the hospital, it was also noted that 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) Explain the causes of Jayden's health condition.

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

(b) Suggest what can be done to improve Jayden's health condition without taking him to hospital.

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

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END

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