

Name: _____ Stream: _____

553/1

BIOLOGY

Theory

Paper 1

2 hours



Uganda Certificate Of Lower Secondary Education

S.2 ASSESSMENT SET ONE

Biology Theory

Paper One

2 Hours

INSTRUCTIONS

- ✓ Attempt **ALL** questions in section **A** and any **ONE** question in section **B**.
- ✓ Present your responses in a logical manner.
- ✓ Poor handwriting and disorganized work may lead to loss of scores.

SECTION A

(Respond to ALL items in this section)

Item 1

Peter planted his crops near an industry that could release toxic wastes into his land. The land had soil made up of small-sized particles. He did not provide his garden with manure. After sometime, he waited for harvest but he got little yields.

Task

- a) What type of soil was dominant in the land and what other properties does it have?

- b) Why did Peter get few yields?

- c) Advise Peter on what he could do to improve his yields next season basing on his former experiences.

Item 2

The plants are located in a dry area with little water, having shallow soils and deficient of nutrients. Some of the plants in the area are unable to have support on their own. Even when the conditions are unfavourable, all the plants present there are able to survive.

Task

- a) How do the parts of the plants in the area appear?

- b) How does the appearance of the plant parts enable the plants to survive in the area?

[illegible]

(Respond to **ONE** item from this section)

Nitrogen is one of the most important components of all living organisms being a constituent of proteins, nucleic acids like DNA and chlorophyll in plants. However, its major source is the atmosphere whereby it contributes 78% of the total composition of air. This atmospheric nitrogen is in molecular form which makes it not readily used by the living organisms.

Task

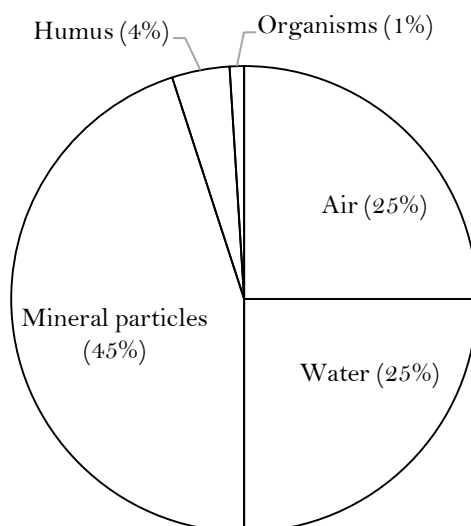
- Make a writeup to show how the living organisms can make use of that nitrogen to build up their organic matter.
- In an area, the plants have their leaves being yellow in colour a condition known as chlorosis leading to poor food production. What led to poor food production and how can the problem be solved?

Item 4

A farmer wanted to his crops on a piece of land. However, he wanted to know whether the soil from the land was fit for survival of his crops. He decided to get 450g sample of fresh soil from the land and placed it on an evaporating dish and allowed it dry until the weight of the soil reduced to 380.5g. After that, he placed the soil in the crucible and then heated it in an oven until the weight of the soil reduced to 367g.

Support material

EXPECTED PERCENTAGE COMPOSTION OF SOIL CONSTITUENTS



Task

Assess and see whether the soil was fit for the survival of the crops and provide relevant advice to him.