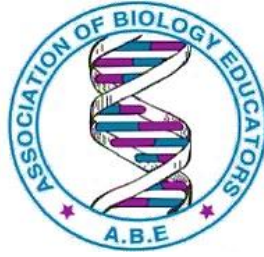


Learner's name _____

553/1
BIOLOGY
(Theory)
Paper 1
Nov-2023
2½ hours.



**Uganda Lower Secondary Certificate of Education
End of Cycle Examination
BIOLOGY
(Theory)
2 Hours: 30 Minutes**

INSTRUCTIONS TO LEARNERS

Respond to all items

Responses must be written in the space provided only.

Item 1.

Plants provide one of the most diverse environments for organisms on earth. Unfortunately, they are facing threats due to various factors, causing their populations to reduce at an alarming rate. As a result, the delicate balance of the environment is disturbed, posing a significant challenge to variety of living organisms dependent on the plants and the sustainability of natural resources.

Task.

Explain how possible threat factors to organisms in scenario affect long-term survival of variety of living organisms and the natural resources and provide solutions to ensure environmental stability. **(15 scores)**

Item 2.

Moses planted and mixed maize and bean crops on his plot along an extremely dusty road side. As a way of obtaining good yields, prepared his garden well, planted quality seeds in closely packed columns and rows, applied fertilizers, Sprayed to prevent any pests and removed weeds. He planted maize earlier and planted beans later after maize plants were already tall. His maize yielded poorly and beans remained stunted with no yields. He is nervous about the outcomes yet spent lot of money on the garden.

Task.

Help Moses understand the cause of the outcomes and advise how he can plant the same plants in the same garden in other seasons with minimal losses. **(15 scores)**

Item 3

A 48 year old patient presents the following symptoms- swollen feet and general body weakness (tiredness/fatigue).

Doctors recommended the patient to have a simple meal which included bread, piece of egg and water. After three hours resting, blood and urine samples were obtained and test on his urine sample made. The test results on concentration of different substances in blood, and urine are presented in table below.

Substance	Concentration of blood plasma (g/dm ³)	Concentration of urine of normal person (g/dm ³)	Concentration of patient's* urine sample (g/dm ³)
Glucose	1	0	0.9
Urea	0.3	300	50
Plasma proteins	80	0	40

Task.

Explain why resting was necessary and analyze the patient's results to provide possible solutions on how the condition can be managed. **(15 scores)**

Item 4.

A 60 year old woman has a neck lump (swelling), frequent back pain and poor vision. Doctors further revealed that she has porous bones in her back bone and

Task.

(15 scores)

After birth, the baby emerged as an albino yet the two parents have normal skin color. The family relatives to the man have rejected the baby claiming she could have conceived from another man who is probably an albino. The family suspects so because the first born to the couple had normal skin color.

(15 scores)

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