

SECTION B (SELF HELP DIAGNOSTIC QUESTIONS)

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.

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.

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 Age-related long-sightedness. Her family members may manage her condition through diet. The family people lack correct plan and nature of diet to administer.

Task. Explain cause for the old woman's health condition, suggest how a suitable diet and sight defect correction would manage her condition. (You may include sight defect correction diagrams in your response).

Item 5

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.

Task. Explain to the couple and entire family the possibility of having such a baby and accept the baby as part of family.

Item 6.

Queen Elizabeth National park has abundant wild life, including several plant species, kobs, Nile crocodiles, lions, hyenas and wild rabbits. People from neighboring community illegally hunt kobs and wild rabbits for meat. This affects the stable interdependence among wild life and as a result, other deadly wild animals then attack human life and their domestic animals as escape from the park to neighboring community. Due to loss of human life and effect on tourism sector, government calls upon potential people to sensitize the community about the current situation.

Task. Explain how various human activities affect the interdependence of the above organisms and sensitize the community on outcomes of their activities and likely possible benefits they avoid such activities.

Item 7.

Soil provides 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.

Item 8.

A family lives in Katanga slum, a suburb of Kampala city. Near his home there are old pit latrines, a pond and a heap of decaying garbage deposited by the neighbors and his family. From time to time his children fall sick and some have died of different diseases. Kiremya is accusing one of his neighbors of causing the sickness and death of his children.

Task: Imagine you are a counselor, write a sensitization message to Kiremya's family to enable them live in peace with the neighbors.

Item 9.

Soil is an important economic resource in our society especially if used rightly. Some of the people in society are farmers and so use it for growing crops, others are builders and use it for plastering houses, while others are potters and use it in ceramics to make stoves and pots.

However, all those persons lack the knowledge of physical and chemical properties of soil and consequently the farmers get poor harvests, the plaster done by builders gets loose and fall off, while the potters their products last for a short time. All categories of these people have noted a decline in their market for the products and their business are almost collapsing.

Task : As a soil scientist and extension worker prepare a write up for each category of people to save their business and benefit from their activities.

Item 10.

Sarah a 50-year-old woman has been experiencing dental issues of late. She often neglects her oral hygiene, rarely brushes her teeth and frequently consumes sugary snacks. As a result, she develops tooth decay and gum disease. In addition, Sarah has difficulty in digestion of certain foods due to insufficient enzyme activity.

Task: Explain the effects and how Sarah's poor oral hygiene and dental problems affect the digestion of food and also affect the assimilation of the end products of digestion.

Item 11.

Bruno Fernandes is a footballer of Manchester United football club. One day he fell and shortly could not stretch and move his arm freely but had no fracture diagnosed. He was taken to a physiotherapist who attended to him and got better with no medicine administered.

Task. Imagine you are the physiotherapist prepare a write up to explain what caused his arm failure and how you would work as a physiotherapist to enable him to stretch and move his arm freely again.

ENDS