**UNIT 1: PLANT PHSIOLOGY.**

**1.1**

**1.2**

Mr. Kato planted maize in a cassava garden at the point of tuber formation. When the maize was flowering, a heavy hail storm hit the garden and destroyed all the crops, breaking all the cassava stems. After a month, Mr. Kato was surprised to see the cassava plants sprouting again, but there were no new maize plants re-growing.

**Tasks**

(a) Identify the plant structures affected by the hail storm.

(b) Explain how the normal functioning of the plants were

affected by the hail storm.

(c) How did the affected plants regain normal growth?

**1.3**

**UNIT 2: HUMAN COORDINATION & RESPONSE.**

**2.1**

Caroline is a 35-year-old female who reports a weight loss of 12kgs within a month and denies dieting. She is obviously anxious and irritable, and states that she has insomnia. Her signs are within normal limits, except her heart rate that is 162 (normal is 60-100), and an increased body temperature. Several months back, Caroline has been also involved in smoking shisha and taking stimulant drugs.

**Task**

**(a)** What glands are involved in Caroline’s condition?

**(b)** Explain the problem with her glands and how this affects her normal body function?

**(c)** Provide suitable advice to Caroline to overcome such life lifestyle and manage her health in good state.

**2.2**

A 60-year-old woman has a neck lump (swelling), frequent back pains 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 on addition to other measures.

**Task.**

**(a)** Identify the challenges affecting the old woman’s health.

**(b)** Explain cause for the old woman’s health condition and the effect on normal body functioning?

**(c)** Suggest how a suitable diet, sight defect correction and other possible strategies would manage her condition. (You may include sight defect correction diagrams in your response).

**2.3**

Jack has of recent experienced frequent urination, increased thirsty, frequent hunger and blurred image of far objects, when he went to the hospital, the doctor tested his urine which tested positive for glucose. Later the doctor advised him to manage his diet, not engage in vigorous exercises and visit an optician.

**Task.**

(a) Identify the disorders Jack is experiencing.

(b) Show how each Disorder leads to the symptoms present in Jack’s body

(c) Explain possible ways to manages Jack’s health condition.

**UNIT 3: HUMAN REPRODUCTION, GENETICS, VARIATIONS & GROWTH AND DEVELOPMENT.**

**3.1**

**3.1**

**3.3**

**UNIT 4: DIVERSITY OF LIVING THINGS, ECOLOGY, HUMAN & THE NATURAL ENVIROMENT.**

**4.1**

Due to the need for charcoal, space for farming and infrastructure development, most forest reserves across the country have been destroyed. This continuously hinders Uganda from achieving the Sustainable Development Goals (SDGs) 2030.

**Task**.

1. Explain how such activities hinder the attainment of the possible SDGs and describe strategies for the achievement of the SDGs affected by such activities.
2. Suggest such how strategies would ensure the economic growth of Uganda and the well-being of people of Uganda.

**4.2**

A chemical factory was established in a swamp which had a flowing river, supporting nearby communities with water and mud fish. The water in the river stream became greenish, and there was a lot of growth of water hyacinth (water weed) in the river. The mud fish harvests have greatly dwindled and many community members were diagnosed with respiratory diseases. The community members have recorded serious

complaints with the local leaders.

**Task**

1. Explain to the local leaders the problems in the community.
2. Suggest possible solutions and show why the swamp should be kept in its natural state.

**4.3**

As a result of a civil in one of the countries neighboring Uganda, many people entered the country as refugees. These settled themselves in a game reserve of a boarder district, part of which had a forest reserve. A refugee camp was set up, but the area later became too small for the people. There were many cases of wild animals attacking the refugees and the refugee community faced a number of challenges. The local area

leadership is very concerned.

**Task**

1. Help the refugee community to understand their problems.
2. Give advice and sensitize them on the value of conserving the natural environment in the area.

**UNIT 5: ANIMAL PHYSIOLOGY.**

**5.1**

Sarah is a young athlete who recently started a new high-intensity training program to prepare for an upcoming marathon However, she notices that despite drinking plenty of water, she experiences frequent muscle cramps during her workouts. She wonders why she is experiencing these cramps even though she stays hydrated and maintains a nutritious diet, and seeks to understand the underlying biological reasons for this issue.

**Task.**

1. Identify the processes/body parts involved and their roles
2. Explain how she can overcome the problems associated with her routine.

**5.2**

A 40-year-old male patient showed the following signs and symptoms: 1) painful and bleeding gums, 2) High blood pressure and 3) Shortness of breath and coughs up mucus with blood. He admits to the doctor that he has been smoking for the recent 20 years.

**Task.**

1. Identify the body organs affected and describe how the patient’s body function is affected.
2. suggest possible strategies that would improve his health.

**5.3**

**UNIT 6: PRACTICALS.**

**5.1**

A farmer plans to add a liquid fertilizer to his garden. However, he is little nervous because the last time he used the fertilizer many of his crops wilted and some even turned yellow and dried up. You have been provided samples P and Q of two fertilizers and specimen T which is grown by the farmer.

**Task.**

Carryout a scientific investigation using specimen T and solutions P and Q, suggest what the farmer could do to enable him add the same amount of fertilizer while being more likely to avoid this problem.

**5.2**