

ITEM ONE

EC1

1. Mr. Ali planted beans in his garden having mature sugarcane. Just before the beans could flower, a heavy hailstorm hit the garden and all his crops were destroyed. After a month, Ali was surprised to see that there were new young sugarcane growing but no new beans were growing.

Task

- a) Identify the plant structures affected by the hailstorm
Possible responses:
- b) Explain how the hailstorm affected the normal functioning of the crops
- (c) Explain why Ali did not have to worry about his sugarcane, but instead got worried about beans.

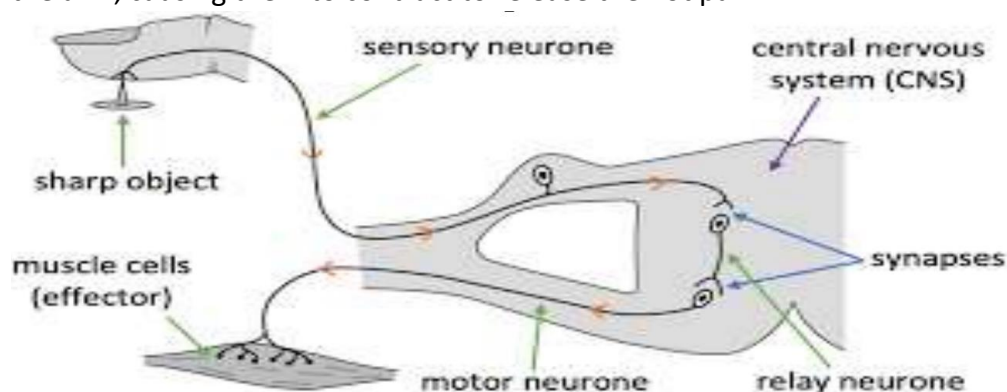
ITEM TWO

EC4

A sixty year old woman rushed to lift a pan of milk that was boiling. She dropped it immediately she touched it with her bare hands and the milk poured. She slipped, fell and fractured her femur. On addition to the burns and scalds, when taken to hospital, the orthopedic doctor diagnosed her with osteoporosis.

- a. Clearly describe the events that took place in the old woman's body from the time she touched the saucepan until she dropped it.

Heat stimulated thermoreceptors of the skin which generated impulses fired to the spinal cord via sensory neurones. In the spinal cord, impulses from the sensory neurone pass via a synapse to the relay neurones then via another synapse to the motor neurones which carry the impulses to the muscles of the arm, causing them to contract to release the hot pan.



- b. What symptoms could the doctor have based on to give the diagnosis?
- c. How can you prevent the health condition diagnosed by the doctor?

ITEM 3

EC4

2. Mrs. Zedius, a mother of four boys is currently pregnant expecting her fifth baby however her husband threatened to beat her if she produces a baby boy again since he wants to have a girl in his family. Due to the pressure and stress from her husband, she has resorted to heavy drinking of alcohol and missing antenatal visits.

Task

- a) Help Mr. Zedius understand why the sex of the baby is not the choice of his wife but biologically determined.
- b) Explain the effects of her behaviour on her body and the unborn baby.
- c) Advise the family on how to overcome the challenges they are facing.

ITEM 4

EC1

Mark, whose farm is located in a village on the hills of Sironko grows crops and is worried after a heavy rain washed away part of the soil in his garden along with some crops down into the river. Other plants were left with their roots exposed. Mark largely depends on farming and a natural environment for energy sources like firewood, burning charcoal for home use and sale. The District Environment officer blames mark for the problems he is facing. Mark wishes to understand how he is responsible for the problems so as to solve the problem without moving away from his ancestral land.

Task:

Help Mark understand the problems caused by his activities and the natural resources affected and advise him on how to live in the same place without causing much harm to the environment also highlighting why is it important for him to conserve the environment?

ITEM 5

EC3

John, a 13-year-old was experiencing general body weakness and was scared that he may not participate in the school interhouse athletic competitions. He was advised to first eat before engaging in any sports activities which he did take a meal of posho and beans. After resting for about an hour, he felt stronger and managed to even win his race. However, after the competition john experienced deep breathing and muscle pain causing him to walk with a lot of difficulty.

Task:

Describe the process that led to the success of John and help him understand why he experienced deep breathing and difficulties in walking there after.