

SECTION A

(Answer all the items in this section in the spaces provided.)

1. Mr. Shane planted his bean seeds in a garden that had many leafy mango trees casting shade, the beans germinated very well but put on some few leaves, of which some turned yellow due to lack of nutrients, they also had very few roots. He decided to apply some organic fertilizer, the stems of the beans became long and thinner (etiolated) and the leaves also became dark green while others used their tendrils to attach on the mango tree. The overall yield of the beans was lower than expected.

**Task.**

- (a) Explain why the yield of the beans was lower than expected.

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- (b) How were the beans able to survive the condition to give the low yields?

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2. Chemonge is a long distance runner, whose heart beat increases when he sees the track and fellow athletes before the race, and after the starting whistle is blown. Recently, he started feeling too thirsty, urinating more than often and losing weight without trying, his doctor told him that it was a medical condition, He also gets a lot of muscle cramps. All this has greatly affected his performance.

**Task**

- (a) Describe how Chemonge's body coordinates to allow him to take part in all his races.

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- (b) Advise Chemonge on how he can improve his performance again.

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3. Sandrah a S.5 student joined a group of girls who visit night clubs with older men. Sandrah who cannot distinguish between red and green colours got pregnant and produced a baby boy and she is afraid that the boy may inherit her defect. The suspected father of the child can differentiate between red and green colours.

**Task**

- (a) What challenges is Sandrah likely to face as a result of her pregnancy.

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- (b) Using a genetic diagram, show the chances that the baby will inherit the same condition.

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(c) What measure should Sarah take to ensure the baby grows well.

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**SECTION B**  
**(PART 1)**

Answer only **one** item from this part. Answers should be written in the booklet(s) provided.

4. Lake Nyabihoko has faced problems like too much agricultural runoff and plastics, over fishing and water hyacinth that is covering the largest part of the lake. The ministry of agriculture recently introduced a bug that eats the leaves of the water hyacinth, this bug is food to frogs which are also much hunted by Tilapia fish whose numbers are slowly reducing, as a result, the water hyacinth is on the increase again.

**Task**

(a) Explain to the ministry how over fishing has led to an increase in the water hyacinth on L. Nyabihoko.

- (b) What measures should be put in place by the ministry of agriculture to conserve the lake and what will be the benefits of this?
5. Juma who lives on the steep slopes of the mirama hills has grown Irish potatoes while applying NPK fertilizers for quite a long time and reared many cows, also burnt charcoal as his side business and did lumbering too, famine. Strong winds, landslides, death of fish in the rivers below as well as decrease in wild life population have been reported in the area

**Task**

- (a) Explain how Juma's activities have led to the challenges mentioned and how they can be overcome.
- (b) Why is it important to conserve the steep slopes of the mountain?

**Part II**

Answer only **one** item from this part. Answers should be written in the booklet(s) provided

6. Angella is a pregnant lady who stays in a single room, very small and has no ventilators or windows, this room doubles as her kitchen in which she uses polyethene bags to light the charcoal stove. Angella does most of her tasks while seated down because the pregnancy is heavy; and says she only prefers her food deep fried and very sugary drinks. Angella has started experiencing some challenges. She is blaming everything on the pregnancy, but her doctor says it's her lifestyle.

**Task**

- (a) Explain to Angella how her lifestyle could affect her normal body functioning.
- (b) How could Angella improve her lifestyle to reduce on her challenges?
7. Kent was picked by his teacher to take part in a race during their physical education lesson, after the race, Kent had a fast heartbeat, rapid rate of breathing, his body tasted salty, produced small volumes of yellow urine and muscle aches. Recently, he started getting swollen ankles (oedema), increased need to urinate at night and frequent fatigue as well as blood in urine. All these have made his performance in the subsequent races to decline. The doctors said that all these were symptoms of a medical condition.

**Task**

- (a) Explain to Kent what he experiences every after a race.
- (b) How can Kent manage his condition so as to make his performance better?

**END**