

## NLSC BIOLOGY SEMINAR AT ST JOSEPH'S SS NAGALAMA 2025

### ITEM 1 (E.C 2-Section A)

#### Item 1

An Irish potato farmer in swampy area had his garden flooded for a long time during prolonged rains experienced in the area. He made the following observations about his garden during the season

- The leaves of the potato plants turned yellow
- The potato plants became stunted with weak stems
- Some potato plants wilted others had rotten roots

When the rains reduced and the flooding was no more, the Irish potato plants revived, having greener leaves, upright stems and numerous roots. The plants managed to produce Irish potatoes for the farmer.

#### Task

- (a) Explain the observations made by the farmer during the rainy season
- (b) How did the potato plants finally manage to produce Irish potatoes for the farmer?

**ST JOSEPH'S SS NAGGALAMA**

### ITEM 2

Mr Kadimba a farmer in Mityana district intercropped beans within a mature Banana plantation. When the beans were flowering and bananas bearing fruits, the area experienced a heavy hail storm that left the entire garden destroyed. Many bean flowers, leaves and stems were broken to the ground and some banana plants were even uprooted. Mr kadimba did not harvest any beans. Two months later, he observed that the remaining banana plants developed an extensive root system, produced numerous suckers with broad green leaves and straight stems. The banana plantation was restored.

**LIGHT ACADEMY**

#### Task:

Explain how

- (a) the hail storm affected the beans leading to no harvest that season.
- (b) the banana plantation was restored two months after the hail storm

### **ST. JOSEPH'S SEMINARY NYENGA**

#### **Item 3**

Mr. kagoro prepared his garden well and planted beans which were looking healthy for the first three weeks. Suddenly, a dry spell set in and most beans had their leaves turning yellow, and some wilted. At flowering stage though, the garden was invaded by numerous bees for some time. After the visit by the bees, the bean pods started forming and finally the beans gave some yields.

#### **Task**

- a) Identify the major challenges faced by the bean plants in Mr. Kagoro's garden
- b) Explain the internal processes that took place in the bean plants from the time bees visited until when the yields were realized.
- c) How did the beans overcome the prevailing conditions to give some yields?

### **QUEEN OF MATYRS**

#### **ITEM 2 (E.C 4 -Section A)**

#### **Item 4**

Mary, a P.6 pupil frequently urinates and feels hungry oftenly especially after eating sweet things. Despite being a short girl in class, she sits behind, since she experiences eye strain while copying work when seated very near the chalk board on the front seats of the classroom. These two health conditions have affected her study and the parents are looking for solutions.

#### **Task**

- (a) Identify the health conditions present in Mary and explain how each one comes about
- (b) Explain to mary's parents how they can manage the health conditions present in their daughter.

**UMAR BA**

### Item 5

Anna, a teenager, recently joined a peer group of boys who smoke marijuana, and frequently watch films at the cinema hall in trading centers late into the night. One night, as Anna was walking back home, she encountered a fierce dog barking loudly and running towards her. Her heart rate and breathing rate increased, eyes protruded, she tried running but her legs were too weak to support her and so she fell down.

Task:

(a) Explain

- (i) the likely effects of Anna's new lifestyle on her life.
- (ii) how her body coordinated to bring about her reaction after encountering a fierce dog on her way back home.

(b) What advise can you give to Anna to avoid the challenges associated with her new lifestyle?

**ST. BALIKUDEMBE SS KISOGA**

### Item 6

A grandmother instructed her grandson to watch over a saucepan of milk on fire until it boils. At boiling, the old woman rushed to lift the saucepan, but in the event, she immediately released it, slipped off and fractured her leg in additions to burns and scalds sustained. When rushed to the hospital, the orthopedic doctor diagnosed her with Osteoporosis.

a) Explain

- (i) The effects of the grand mother's health condition as stated by the doctor
- (ii) how her reaction after lifting the hot saucepan came about.

b) Advise the grandmother on how she can manage and improve her health condition as stated by the doctor.

### ITEM 3 (E.C5-Section A)

#### Item 7

An NGO was established in a given community which has high cases of teenage pregnancy and related problems. The NGO has two clear mandates to execute in the community. Namely:

1. Sensitize adolescents on reproductive health, with emphasis on menstruation as a land mark process in adolescent girls.
2. Promote awareness on STI especially HIV/AIDS and promote healthy living.

The NGO does its work through meetings with the youths and other groups to sensitize them in line with the mandates above.

#### Task

- (a) Provide information to explain how the land mark process in the first mandate of the NGO occurs in adolescent girls.
- (b) What advises can you give to the community adolescents on how to overcome challenges handled by the NGO in line with the second mandate?

**PAUL MUKASA KIGUNGA**

#### Item 8

A couple living with HIV has had three healthy children. Their fourth born however was born with pale skin, white hair and pink eyes. This worried them, since they were both dark-skinned but the doctors advised them to take care of the baby properly, since it was a genetic condition and so the baby would grow normally as others.

#### Task

- (a) Using genetic symbols, show how the condition in their fourth born came about.
- (b) Explain how the couple can
  - (i) continue living positively with their health status
  - (ii) take care of their fourth born child

ST. CYPRIAN HIGH SCHOOL KYABAKADDE

Item 9

Musa and Sharon have been a happy couple with three healthy boys. When Sharon realized that she was pregnant for a fourth boy, she was very disappointed. She blamed the man for failing to give her a girl, refused to go for antenatal care, started skipping meals, and had thoughts of abortion. This has caused a lot of family distress and Musa is very worried.

***TASKS:***

- (a) (i) Using Genetic diagrams, explain to Sharon why she should not lose hope of having a girl child.
- (ii) Explain the likely consequences of Sharon's decisions.
- (b) Suggest what can be done to help the couple stay healthy and have a safe delivery.

**UGANDA MATYRS SS KAYUNGA**

**ITEM 4/5(E.C1-Section B)**

Item 10

An Environment status report was published highlighting the state of affairs at a certain landing site on a fresh water lake. Below are some of the issues highlighted in the report:

- The many factories established along the shores of the lake release untreated effluents directly into the lake.
- There were no latrines at the busy landing site
- Fishermen use indiscriminate fishing nets to catch fish
- The surround swamp has been taken over by real estate dealers and have raised residential apartments.

The above challenges are believed to cause serious harm to the environment and the human population.

Task:

- (a) Explain how the highlighted activities on the landing site will affect the environment and the human population.
- (b) Suggest
  - (i) Possible solutions to the above challenges
  - (ii) Why it is important to conserve such ecosystems

### **ST. FRANCIS BORGIA HIGH SCHOOL**

#### **Item 11**

Mr. Mukasa cleared a forest along the slopes of a hill that had fertile soils to extend his farm for growing maize. For several years of growing maize on his farm, he applies artificial fertilizers and uses herbicides for weeding the maize farm. After harvesting, he burns down the garden to clear it for next season before ploughing using tractors.

#### **Task**

- (a) Explain the dangers of Mr. Mukasa's farming practices to the environment.
- (b) How can the environment be sustainably utilized by Mr. Mukasa without much damage?

### **MT ST. MARY'S NAMAGUNGA**

#### **Item 12**

In a hilly area with scattered trees, farmers constantly did up and down the hill to grow crops, cut down the trees for charcoal, are engaged in brick laying and oftenly graze large herds of their cattle on the hill. During heavy rains, the area faces mudslides and flooding in the valleys. Residents attribute these to the activities happening on the hills.

#### **Task:**

- (a) Show how the farmers activities have resulted to the challenges faced during heavy rains.
- (b) Point out the benefits of conserving such areas.

### Item 13

Developing countries depend heavily on fossil fuels to run their agricultural activities like fuelling tractors, harvester machines and most motor vehicles. The machines used in agriculture are said to affect soil properties leading to reduced productivity while fuels are associated with causing death of organisms, global warming, climate change and other environmental issues. To reduce the above effects, Uganda banned importing of cars older than 15 years.

Despite experts explaining that these cars have old technology that leads to increased release of pollutants like greenhouse gases and smoke, most car dealers believe the government wants to put them out of business.

#### ***TASKS***

- a) Explain to the car dealers how their cars contribute to the environmental issues talked about in the scenario.
- b) Suggest environmentally friendly alternatives that can be used to reduce dependency on the above fuels that are considered harmful to the environment.

#### **NAMIREMBE HILL SIDE**

### ITEM6/7 (E.C3-Section B)

#### **Item 1**

Mr. Kaggwa took a cup of porridge before going for his routine exercises in the gym. He started exercising with vigor but later felt muscle pain and fatigue. He decided to sit down but continued to experience rapid breathing and feeling hot which later stopped and the pain also disappeared. He took a glass of juice, and went back home.

#### **Task**

- (a) (i) Describe how the porridge enabled Mr Kaggwa carry out his exercises in the gym.
- (ii) Explain the challenges his body experienced during the exercise.

- (b) How did his body handle the challenges to enable him go back home?

### CENTRAL VIEW HIGH SCHOOL

#### Item 2

David's 3-year-old son was attacked by sickness that resulted in the breathing difficulties, high body temperature, vomiting and soars in the mouth. The baby was rushed to the hospital and after some treatment, the breathing normalized and the vomiting ceased. The doctors advised that although the baby was still anaemic, the most appropriate treatment is proper diet that can enable the baby fully recover.

#### Task

- (a) Explain how the sickness affected the normal functioning of the baby's body.
- (b) Suggest an appropriate diet with reasons which will enable the baby to recover as per the doctor's advice. **NAMILYANGO HIGH SCHOOL GULAMA**

#### Item 3

A long serving public servant lives a sedentary lifestyle characterized by smoking, sitting in office for long hours and eating a lot of fatty foods. In the long run, he has developed swollen feet, coughs blood and has been diagnosed with cardiovascular disease and poor oxygen loading by his red blood cells.

#### Task

- (a) Justify the poor health observed in the public servant In relation to his lifestyle.
- (b) Advice the public servant of how to improve his health

**MPOMA ROYAL COLLEGE**



