



LIGHT EXAMINATIONS BUREAU(LEB)

“The Academic Epitome”

SENIOR THREE END OF YEAR HOLIDAY PACKAGE 2024

BIOLOGY

Student’s Name.....Stream.....

LIN No.....Expected Score.....%

INSTRUCTIONS TO SEMI CANDIDATES:

Attempt all items.

SECTION A

ITEM ONE

Dr. Lutaaya Emmanuel, a zoologist at Makerere University conducted a study on the transportation systems of various animals in Mabira Forest. He observed five animals and recorded their characteristics as shown below:

Animal A: Had a four chambered heart, double circulation and a network of arteries, veins and capillaries.

Animal B: Had an open circulatory system with a heart and hemolymph.

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ITEM TWO

Mutebi is a taxi driver in Gayaza. He got involved in an accident a few days ago though he did not sustain any serious injuries. However, he currently experiences pain when he tries to rotate his head.



Fig.1.0 showing Mutebi rotating the head with a lot of pain.

He has approached you for assistance.

TASK

(a). Help him identify which bone specifically could have been affected.

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(b). Help him to identify the adaptations that the affected bone has.

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(c). How best would you advise Mutebi if he is to improve his condition?

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ITEM THREE

Dr. Kasagga Livingstone is a plant physiologist who is currently studying the growth and development of a newly discovered plant species. Below are his observations:

- Seedlings exhibit rapid hypocotyl elongation in low light conditions.
- Roots develop lateral branches in response to nutrient rich soil.
- Stem internodes shorten and leaf density increases in response to increased light intensity.
- Leaf senescence occurs in response to drought stress.



Fig.2.0 showing Dr. Kasagga Livingstone while in the Laboratory.

You have happened to pass by the Laboratory while he is carrying out his study.

TASK

As a biology student, explain to him the physiological processes that control each observation he made during his study.

As a biology student, write a presentation you will deliver to Reagan.

PART II

Research made by medical doctors in Uganda has revealed that animals including human beings eat complex food substances such as carbohydrates, proteins, lipids and vitamins. Once taken in, this food undergoes several processes in the body of the mammal in order for it to be utilizable.



Fig.4.0



Fig.5.0

Figures 4.0 and 5.0 show two different groups of mammals feeding.

TASK

Write a report on how the above mammals obtain and absorb the nutrients.

END

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MERRY CHRISTMAS AND A HAPPY NEW YEAR 2025