



**EAGLE'S NEST SECONDARY SCHOOL- KAMPALA**  
Uganda Certificate of Education

**MID TERM II ASSESSMENT EXAMINATIONS 2023**

**BIOLOGY**  
**S.3**  
**2Hrs**

NAME..... Stream: .....

Signature: .....

**INSTRUCTIONS:**

• This paper consists of section A and section B, Section A consists of five questions and B four questions.

Attempt all questions in section A and any one question in section B.

• Answer **all** questions in the spaces provided.

• Illustrations in form of drawings should be made where necessary, with a sharp pencil.

**For official use only** Indicate question attempted in section B in table below.

Section	Question	Marks/scores	Teacher's comment
A	1		
	2		
	3		
	4		
	5		
B			

## Section A

**Attempt all questions in this section.**

1. Ivanovsky, a Russian botanist in 1852 discovered viruses. Under his further investigation, he discovered that viruses were very small, very infectious and possessed features for both living and non-living things. In 198, acquired immunodeficiency syndrome (AIDS) first appeared in America and 2019, covid 19 appeared in china and these two diseases were proved by medics to be pandemic diseases and they are recorded to have caused greater deaths in the whole world. From this information, attempt the following;

(a) State two reasons why viruses are considered to be;

(i) Living things.

(02marks)

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(ii) Non-living things.

(02marks)

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(b) Name the virus that is responsible for causing;

(01mark)

(i) Acquired immunodeficiency syndrome (AIDS)

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(ii) Covid 19.

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(c) Describe two ways how Acquired immunodeficiency syndrome can be transferred/spread between members of the same family.

(02marks)

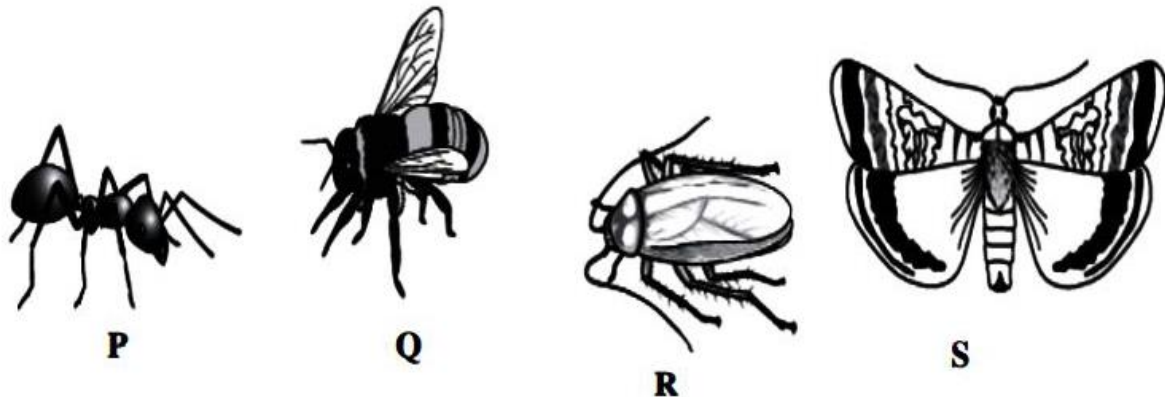
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(ii) concentration gradient.

(02marks)

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3. During a study tour at zika forest, Esther identified the following organisms shown in the pictures. Study them carefully.



(a) Giving two reasons, state the phylum and class to which the above organisms belongs.

(04marks)

**Phylum**

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**Reasons for the phylum stated**

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.....  
class

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Reasons for the class

(b) During the study, the tour guide stated that the population of organism Q has reduced, yet they are important to neighboring farmers.

(i) Explain how reduced population of organism Q affects harvest expectation of neighboring tomato farmers. (02marks)

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(ii) Describe two ways that could have resulted into reduction/decline of population of organism Q. (02marks)

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(iii) State any two other ways how organism Q is important to the people in Uganda.(02marks)

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4. (a) Botanists and zoologists claim that plants and animals depend on each other. Zoologists noted that animals depend on food made by plants but botanists did not explain how plants depend on animals. As a senior three student; explain briefly how;

(i) Plants obtain energy for making their own food. (02marks)

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(ii) Plants depend on animals for their survival.

(02marks)

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(b) Apart from the food which animals obtain from plants, describe different ways how the process by which plants make their own food is important in nature. (04marks)

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(c) State how animals obtain energy from plants.

(02marks)

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5. During a study tour, students of senior three visited maize gardens of three farmers in the same area and made the following observations as shown in the table below; study the observations carefully.

Farmer	Colour of leaves	Maize intercropped with ground nuts	Cocks and hens are in the maize gardens	Maize yield
Q	Green	Yes	No	Average
R	Green	Yes	Yes	High
T	Yellow	No	No	low

(a) As a student of biology, explain why;

(i) Farmer R had high maize yield.

(03marks)

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(ii) Farmer T had low maize yield.

(03marks)

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(b) State why it's not advisable to intercrop maize with beans in a garden close to a place with many hens and cocks.

(02marks)

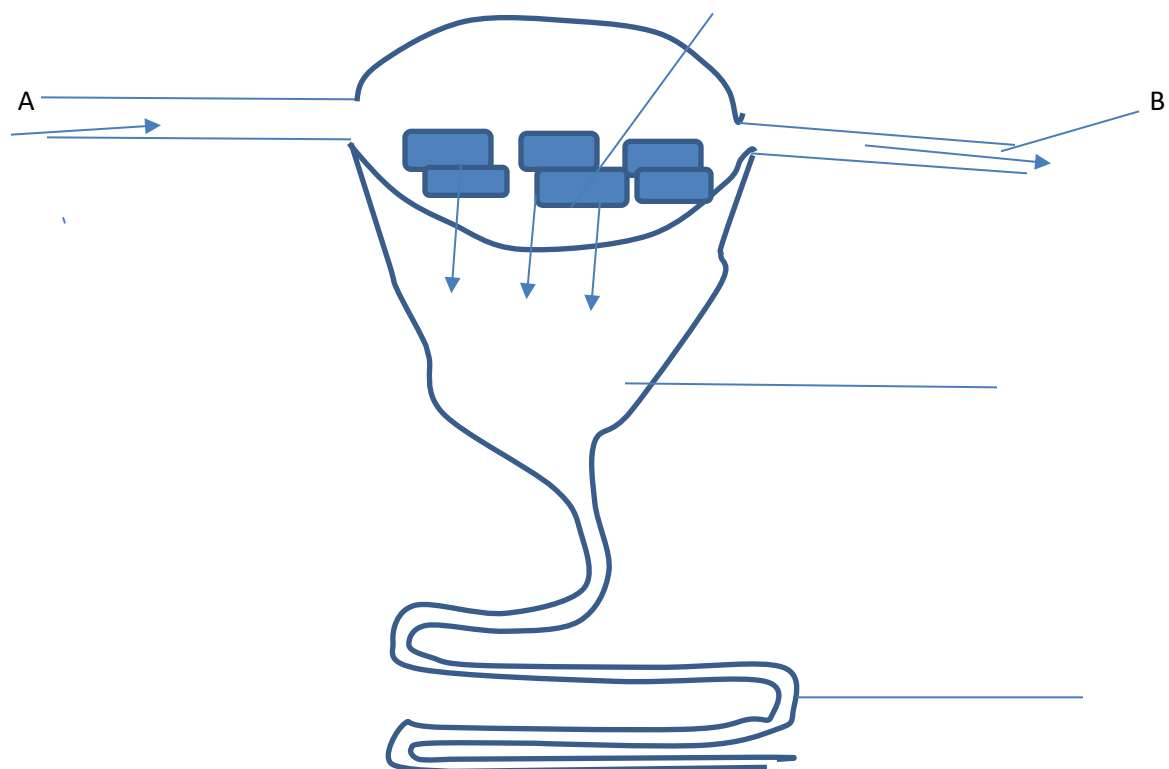
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(c) How is maize farming important in ensuring balanced diet.

(02marks)

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6. The figure was extracted from the kidney



a). Name the labelled parts from A-E.(5mks)



- A.....
- B.....
- C.....
- D.....
- E.....

b). Give the function of part. (5mks)

- A.....
- B.....
- C.....
- D.....
- E.....

### Section B. (15 marks)

**Attempt any one question form this section.**

6. In Joan's family, Joan's father is blood group A and the mother is blood group B. Peter the first born of the family is blood group AB while Joan the last born is blood group O .One day, Peter's mum was travelling, she got an accident, during which she acquired a serious injury on her leg affecting the circulatory system, that resulted into serious bleeding, though after one hour, bleeding of blood from her body stopped. Due to serious bleeding, Peter's mother was referred to Mulago for blood transfusion.

- (a) Distinguish between Blood groups and Blood transfusion. **(01mark)**
- (b) Describe any three major precautions that a doctor must have considered before successfully transferring blood to peter's mother. **(03 marks)**
- (c) Give the name of the process by which blood stopped bleeding from peter's mum body and give its significance in life. **(03marks)**
- (d) Explain why in Joan's family;
- (i) The father cannot donate blood to the mother. **(02marks)**
- (ii) Peter can receive blood from all family members. **(02marks)**
- (e) On further medical checkup by the doctor over Joan's mother's health, the doctor discovered that Joan's mother had;

- ✓ A default with the valves in the leg
- ✓ Faulty septum in the heart.
- ✓ High calcium deposition in the walls of arteries.

Describe the adverse likely problems to be faced by Joan's mum due to; (04marks)

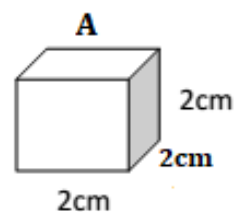
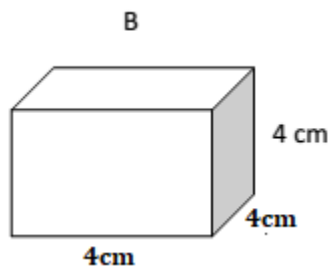
- (i) Faulty septum in the heart.
- (ii) A default with the valves in the leg
- (iii) High calcium deposition in the walls of arteries.

7. During leisure time on Sunday, students of St. Elizabeth Nkoowe watch programs on wild life T.V channel. On day, they saw a lion chasing a giraffe and they were very much excited. The lion took two minutes to capture the giraffe. As a student of biology; attempt the following questions;

- (a) Explain any four life processes that were expressed in the above scenario. (08marks)
- (b) Giving a reason, identify which organism is a predator. (02marks)
- (d) Describe the adaptations of the giraffe to survive in a zoo. (05marks)

8. Many respiratory diseases are due to difficulty in breathing. Many doctors emphasize people in our communities to prevent diseases/ disorders that affect respiratory system, since it will affect their breathing in and out processes.

- (a) Distinguish between gaseous exchange and respiration. (02marks)
- (b) Explain why doctors emphasize the people in our society to carry out efficient breathing in and out. (05marks)
- (c) During a study about surface area to volume ratio, kabogoza was claiming that an elephant has a large surface area to volume ratio than a toad. But the whole class rejected his claim. Using the following shapes, **prove** the whole class right or wrong and give the significance of your proof in terms of gaseous exchange.



9. In dry seasons, farmer's crops face a some problems in regard to water absorption and transpiration. Some farmers claim that the rate of water uptake in their crops depends on the

transpiration rate. In the debate farmers had with ministry of agriculture, some clarified that transpiration is a necessary evil and also in dry seasons, their crop yield is affected, which in turn results into losses. As an expert in transport biology, attempt the following queries.

(a) (i) What is meant by transpiration. **(01mark)**

(ii) State how water absorption rate in crops and transpiration rate depend on each other. **(03marks)**

(b) (i) How does transpiration affect crop yield in farmer's gardens in dry season. **(04marks)**

(ii) Describe why farmers claimed that transpiration is a necessary evil. **(03marks)**

(c) Describe any three ways how;

(i) Farmers can improve crop yield in dry seasons. **(02marks)**

(ii) Crops can overcome excessive transpiration. **(02marks)**

**End**

**The struggle continues**