

Names:

.....
.....

ITEMS	LEARNERS SCORES
Item 1	
Item 2	
Item 3	
Item 4	
Total Scores	

KIYALA HIGH SCHOOL
MID TERM TWO ASSESSMENT TEST 2025
BIOLOGY
S.4

Time: 2 Hours

INSTRUCTIONS:

- The paper contains two sections A and B with seven items.
- Section A is compulsory.
- Section B contains two parts I and II, Attempt **only one** items from each part in section B ➤ Any **additional item** attempted **will not** be scored

SECTION: A

Item 1.

Peter is a rural farmer with species in his maize garden which has just begun to flower. He observed that the maize was having eggs of insects on the leaves and beneath the leaves. The local authorities decided to visit Peter's maize garden to find out what was affecting his farm. Peter was advised to consider spraying the maize, nevertheless the maize managed to give some yield.

Task.

a) Identify the plant/disease affected by the insects in Peter's garden.

.....
.....
.....

b) How did the activities of the maize affect the normal functioning of Peter's maize?

.....

.....

.....

.....

c) Explain how Peter's maize finally managed to give some yield.

.....

.....

.....

.....

.....

.....

.....

.....

Item 2

In Kampala, Uganda, a group of health researchers conducted a study on the impact of urbanization and modern lifestyle on the health of the population. Through their study, the results indicated a rise in chronic diseases, such as diabetes, hypertension and obesity among the urban population of Kampala. The factors contributing to the above were identified:

- The sedentary lifestyle, for example lack of physical exercise and sitting for long hours.
- Eating a lot of junk foods.
- Showing a city (much noise and air pollution).

All these lead to a decline in the overall health and well-being of the people.

Task.

a) Explain how the identified factors contribute to the chronic diseases among the urban population as per the study by researchers.

.....

.....

.....

.....

b) Point out the symptoms of any one chronic disease as indicated in the Research Report among the urban population of Kampala.

.....

.....

.....

.....

.....

.....

c) Advise the urban dwellers on how to manage their health conditions and live a better life.

.....

.....

.....

.....

.....

.....

.....

.....

Item 3

In Kanapa village, a paternity dispute has arisen between a man, Mr. Okello and a woman, Mrs. Okello. Over their 2-year-old child's. Mr. Okello denies being the biological father of the child since they have different blood groups while Mrs. Okello claims he is the right father. The child's blood type is O, Mrs. Okello's blood type is B, while Mr. Okello's blood type is A. Recently, the child was diagnosed with a bleeding disease after an injury, where he even needed a blood transfusion but neither of the parents had such a disorder.

Task.

a) Clearly show to Mr. Okello the possibility of being the father of their 2-year-old child based on the scientific facts of blood groups.

.....

.....

.....

.....

.....

.....

.....

.....

b) What are the likely effects of the disease discovered in the 2-year-old?

.....

.....

.....

.....

.....

.....

.....

.....

SECTION B PART I

Item 4

In recent times, there has been a cry of climate change, which is believed to be caused mainly by increased levels of greenhouse gases and increased levels of fossil fuel burning, deforestation and agriculture is the main cause of the increase in the concentration of greenhouse gases.

The table below shows how the concentration of three gases has increased between 1890 and 1990 and their expected concentrations in 2030.

Gas	Concentration of gas in the atmosphere in a certain year/ part per million		
	1890	1990	2030
Carbon dioxide	290	354	400-500
Methane	0.9	1.7	2.2-2.5
Nitrous oxide	0.28	0.3	0.33-0.35

Task.

- Explain the environmental challenges the above changes in greenhouse gases have caused.
- How is it important to humans to maintain safe levels of the above gases at environmentally friendly levels?
- Provide practical remedies to lower the concentration of the above gases.

Item 5.

Kingdom Plantae is a diverse group of multicellular eukaryotic organisms that includes mosses, ferns, gymnosperms and angiosperms (flowering plants). Plants are characterized by their ability to photosynthesize, using sunlight, water and carbon dioxide to produce organic molecules and oxygen.

Task:

- What are the key characteristics of Kingdom Plantae, including their mode of nutrition, cell structure and reproduction?
- How do plants contribute to ecosystem processes such as nutrient cycling, water cycle and the balance of atmospheric gases?
- How have plants evolved over time to adapt to different environments such as aquatic habitats, arid environments and extreme temperatures?

PART II

Item 6.

Mr. Mukasa, a sixty-year-old, urinates frequently, has blurred vision, feels thirsty often and has swollen legs, feet and face, when he visited a pathologist, he was recommended for a Benedict's test for sugar. The clinical laboratory technician took a specimen solution P from Mr. Mukasa, mixed with a positive test with Benedict's solution. **Task.**

- Identify the malfunctioning organ in Mr. Mukasa's body.
- Explain how specimen solution P is formed inside Mr. Mukasa's body.
- Explain how he can manage the disorder to live a normal life.

Item 7.

Peter and John who are blood group A and B respectively got a fatal accident and lost a lot of blood. When they were taken to the health centre, the doctor used their blood to test the blood group of individuals X, Y and Z to find a universal donor. Later examination revealed that John had severely injured his pancreas.

The table below shows the result.

Person	X	Y	Z
Peter	Clumps	Clumps	No clumping
John	No clumping	Clumps	No clumping

Task.

- Identify the blood groups of individuals X, Y and Z.
- Explain how the accident affected John's body functioning.
- Without referring Peter and John to another hospital, suggest with reasons which individuals could donate blood to Peter and John.

***** WISHING YOU SUCCESS *****