

NAME.....

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BIOLOGY

PAPER 1

NOVEMBER.2023

2 HOURS



SHAPTA JOINT ASSESSMENT BOARD

Uganda Certificate of Lower Secondary Education

BIOLOGY

PAPER 1

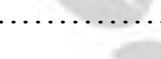
SENIOR TWO

TIME: 2HRS

INSTRUCTIONS TO LEARNERS:

- Respond to **all** items in paper.
- Answers to all items must be written in the spaces provided.

In the district athletics competitions held at your school playground, it was observed that the athletes took glucoses especially after heavy races. It was also evidenced that the athletes sweated while running and their shirts had unpleasant smell at the end of the day. In addition the athletes breathed at a higher rate after every race. Brenda a senior one learner picked much interest in understanding the scientific idea behind the observations above, however due to limited knowledge she could not fully understand the idea.



SHAPTA (10 scores)



ITEM 2

Galiraya is a village found in Kayunga district. The district is among the districts found in the cattle corridor. The community members often times face conflicts with some species of insects where by these insects bite them thus inflicting pain to them and even spreading some diseases. As if that is not enough the insects also bite their plants and animals thus ruining their health causing unrest and reduced productivity of the farms. The community members are carrying out a massive campaign to completely get rid of creature called insect.

- a) As the district agricultural officer of Kayunga, write a speech you would present to the community members about their concern. (10 scores)

- b) Kaliba thought that all small organisms including snails, earthworms, millipedes etc are insects. How would help Kaliba to know what insects are.

(02 Scores)

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	Antenna	Mouth parts	Wings	Legs
A	Long	Mandibles	None	Short
B	Long	Proboscis	Has 2	Short
C	Short	Proboscis	None	Long
D	Short	Proboscis	Has 4	Long
E	Short	Proboscis	Has 4	Short

(08 Scores)

The logo of the University of Pavia is centered at the top of the page. It features a shield divided vertically: the left half is white with a black graduation cap (mortarboard) icon, and the right half is red with a white capital letter 'P'. The shield is encircled by a grey laurel wreath. Below the wreath, two crossed academic staffs (cudgons) are visible. The entire logo is rendered in a light, semi-transparent grey.

A group of learners were watching a video of various animals. As a result, an argument started among them regarding the classification of some animals. One of such animals laid a large shelled egg and had scales on its body with a prominent tail. Some learners insisted that it was a reptile while others insisted that it was a mammal.



SHAPTA

ITEM 4

In an experiment to determine how a certain factor affect the rate of enzyme controlled reaction, the following steps were taken;

- 1) A Bunsen burner, heatproof mat, tripod and gauze were set up.
- 2) A beaker of water was placed on the gauze and the flame was adjusted to keep the water at about 35°C.
- 3) Three test tubes were obtained and labelled D, E, and F.
- 4) Two drops of iodine solution were put into each of the three test tubes.
- 5) 2 cm³ of amylase enzyme solution was added to each test tube.
- 6) 2 cm³ of starch solution were also added to each of the test tube.
- 7) 1cm³ of dilute hydrochloric Acid, dilute sodium hydroxide, and distilled water were added to test tubes D, E, and F respectively.
- 8) The three test tubes were put into the beaker of water maintained at 35⁰c and the stop clock started immediately.
- 9) The time in seconds taken for the dark blue colour to disappear from the content of each test tube was recorded in the table below. Study the results and use them to answer the questions that follow.

Test tube	Time(s)
D	120
E	580
F	43

- a) What was being investigated in this experiment? (01 score)
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- b) Why was the temperature of the experiment maintained at 35⁰c? (02 score)
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- c) Briefly explain the results of the experiment. (04 scores)
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d) What conclusion can you draw from the results of the above experiment?
(02 score)

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e) Identify one site in the human digestive system with a similar reaction like the one that occurred in the test tubes above. (02 score)

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f) Apart from the factor investigated in this experiment, state three other factors that affect the rate of enzyme controlled reaction (04 scores)

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END