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PAPER 1		
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## 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.

#### ITEM 1

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.

observations made?	(10 scores)
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	- AN 100
(b). Some senior two learners had an argument where view that germinating seeds produce heat while of absorb heat. For that reason, they decided to carry the truth. However they were worried of how to convold you help the learners be able to execute the	chers were of a view that they out an experiment to discover conduct the experiment. How
CLIAI	(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 Ka <mark>yung</mark> a, write a speech you would present to the community members about their concern. (10 scores)
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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)
(02 800108)

(c). The table shows the characteristics of some insects.

	Antenna	Mouth parts	Wings	Legs
A	Long	Mandibles	None	Short
В	Long	Proboscis	Has 2	Short
С	Short	Proboscis	None	Long
D	Short	Proboscis	Has 4	Long
Е	Short	Proboscis	Has 4	Short

Construct a simple dichotomous key that can be used to identify the insects.

(08 Scores)

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#### ITEM 3

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.

a) Basing on your knowledge of classification, how would you cresolve the argument between the two groups of learners?	conclusively (10 Scores)
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b) The argument between the learners described above came about animal in an item must be having some features that are commor	
and mammals. Describe three characteristics of this animal that p	place it the
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### 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 cm<sup>3</sup> of amylase enzyme solution was added to each test tube.
- 6) 2 cm<sup>3</sup> 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 35°c 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)
b)	Why was the temperature of the experiment maintained at 35°c	? (02 score)
c)	Briefly explain the results of the experiment.	(04 scores)

d)	What conclusion can you draw from the results of the above experiment? (02 score)
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)
	the one that occurred in the test tubes above. (02 score)
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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