Names:……**Index No:** ……...……

School Exam Number: ……..…**Signature**:…….…..……

*Candidates should **NOT** write their Centre Name or Centre Number anywhere on this booklet*

P530/3
BIOLOGY
PRACTICAL
Paper 3
27 July 2018
3 ¼ hours

ENTEBBE JOINT EXAMINATION BUREAU

Uganda Advanced Certificate of Education

BIOLOGY

PRACTICAL

Paper 3

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3 hours 15 minutes

INSTRUCTIONS TO CANDIDATES:

Attempt **all** *questions.*

Answers must be written in the spaces provided.

FOR EXAMINERS' USE ONLY	
QUESTION	**MARKS**
1	
2	
3	
TOTAL	

1. You are provided with specimen ***R,*** which is freshly killed.

(a) Examine the specimen and state **three** observable external features which are characteristic of the class to which it belongs. *(03 marks)*

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(b) Lay the specimen with ventral side uppermost. Cut along both edges of the mouth to increases on the gape. Then open the mouth wide. *(Use cotton wool to mop blood in case it bleeds.)* Examine the teeth and

(i) Count the total number of teeth in the mouth. *(01 mark)*

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(ii) Write down the dental formula of the specimen. *(02 marks)*

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(iii) From your observations in *b (i)* and *(ii)*, state with reasons the diet of the specimen. *(03 marks)*

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(iv) Other than teeth, state **four** features in the mouth and describe how each of them enables the specimen to cope up with the nature of its diet. *(04 marks)*

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(c) Pin the specimen ventral side up. Dissect the specimen and expose and display;

(i) the reproductive system

(ii) organs and structures responsible for blood circulation and structures for impulse transmission that are observed within the thorax after removal of the rib cage and clearing away of the thymus gland. Deflect the heart to the left of the specimen.

Draw and label your dissection. *(27 marks)*

2. You are provided with solutions ***Q***, **X, Y** and ***Z***.

(a) Using the reagents provided, carry out the following tests on solution Q and record your tests, observations and deductions in Table I below. *(07 marks)*

Table I

Tests	**Observations**	**Deductions**
Starch		
Reducing sugars		

(b) Cut the whole stomach from dissection of specimen ***R***. Cut it open and wash out all its contents. Crush the stomach into a paste and add 8 cm^3 of distilled water. Allow to settle and decant the contents into a test tube. Label it extract ***S.***

Label four test tubes (I) to (IV) and carry out the following procedures.

- To test tube I, add 1 cm^3 of solution ***Q*** and 1 cm^3 of solution ***X***.
- To test tube II, add 1 cm^3 of solution ***Q*** and 1 cm^3 of extract ***S***
- To test tube III, add 1cm^3 of solution ***Q*** and 1 cm^3 of solution ***X*** and 1 cm^3 of solution ***Z***
- To test tube IV, add 1 cm^3 of solution ***Q***, 1 cm^3 of extract S and 1 cm^3 of solution ***Z***
- Incubate all the four test tubes (I) to (IV) at $(35 – 40)^0$ *C* for 20 minutes.
- After incubation, allow the contents to settle and record your observations and deductions in Table II.

Table II

Test tube number	Observations	Deductions
(I)		
(II)		
(III)		
(IV)		

(08 marks)

(c) To 1 cm^3 of solution ***Q***, add 1 cm^3 of solution ***Y*** and incubate at *(35 – 40)^0 C* for 20 minutes. Thereafter, carry out Benedict's test on the contents and record your observations and deductions in Table III.

Table III

Test	Observations	Deductions

(05 marks)

(d) From the tests done, explain the effects of the following on solution ***Q***.
(05 marks)

(i) Solution ***X***

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(ii) Extract ***S***

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(iii) Solution ***Y***

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(e) From the results of this experiment, describe the nature of solution ***Q***.
(04 marks)

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Turn Over

3. You are provided with specimens ***J***, ***K***, ***L***, ***M*** and ***N***.

(a) (i) Classify the specimens ***J*** and ***K*** into the taxa below *(02 marks)*

Specimen	Class	Order
J		
K		

(ii) State the orders to which ***L***, ***M*** and ***N*** belong. *(1 ½ marks)*

L .....

M .....

N .....

(b) Cut off the heads of specimens ***M*** and ***N***.

(i) Put the head of specimen ***M*** on a slide. Observe the compound eye under the lower power of a microscope.

Describe the arrangement of the eye units. *(05 marks)*

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(ii) Observe the head of specimen ***N*** with a hand lens. Draw the posterior view of the head and label only the mouth parts.

(07 marks)

(c) Cut and examine the tarsus of specimen ***M*** under the lower of a microscope.

(i) Draw and label the tarsus with its associated structures.

(6 ½ marks)

(ii) Give the ecological significance of the structure of the tarsus in *c (i)* above. *(04 marks)*

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(d) Observe the heads of the given specimens using a hand lens. Basing on the features of the head only, construct a dichotomous key to identify the specimens in the following order: ***J***, ***K***, ***L***, ***M*** and ***N***. *(05 marks)*

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END