Name……

Signature ……

BIOLOGY
P530/3
PRACTICAL
JULY 2015
3 ¼HOURS

UGANDA ADVANCED CERTIFICATE OF EDUCATION

BIOLOGY PRACTICAL PAPER.

Instructions.

Attempt all questions in this paper.

Your answers must be written in the spaces provided only.

Your drawings must be neatly done using a well-sharpened pencil.

For teachers use only.

Question.	**Marks.**
1	
2	
3	
Total	

PTO

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

(a) Study the external features of the specimen and list **three** observable features of the head that enable the specimen to colonize land. *(03 marks)*

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b) i) Identify two supportive structures on the specimen. Examine and describe each one of them fully. (4marks)

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ii) How are the supportive structures suited for their function? (3marks)

c) Dissect the specimen to display blood vessels which;

(i) supply the left side of the head, neck and thoracic region,

(ii) drain the right side of the head, neck and fore limb as well as the first half of the abdominal region of the specimen back to the heart.

Draw and label (i) and (ii) above in one diagram. (*30marks*)

2. Suspension E was prepared from the common diet of the animal dissected in question 1. Dissect the specimen P further to expose the stomach and the small intestines. Cut the following portions and place on separate petri dishes labeled as E1, E2 and E3 as follows:

    E1-pyloric half of the stomach.

    E2- duodenum plus first half of the ileum.

    E3- the remaining half of the ileum.

Prepare 20cm^3 of extracts E1, E2 and E3 by washing out the contents of the respective structures.

a) Using the reagents provided, carry out the tests given in the table below. Record your tests and observations in the **table 1** below. (20marks)

Test	Observation
Iodine test	E
	E1
	E2
	E3
Biuret test.	E
	E1
	E2
	E3
Benedict's test	E

	E1
	E2
	E3

b) To 4cm^3 of suspension E and extract E1 in separate tubes, add 10drops of sodium chloride solution followed by 2cm^3 of solution A provided. Incubate the mixtures at temperature ranges 35-40^{o}C for 1 ½hours. After this period repeat the tests given in table 1 on the contents of the tubes. Record your observations and conclusions in table 2 below. (6marks)

Test	**Observation**	**Conclusion.**
Iodine test	E+A	
	E1+A	
Biuret test	E+A	
	E1+A	
Benedict's test	E+A	
	E1+A	

c) From your results in table 1,

i) Compare the abundance of the various nutrients in suspension E with that in the extracts.

(9marks).

Extract E1

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Extract E2

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Extract E3

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ii) Account for the difference, if any, in the observations for suspension E and extract E1

(4marks)

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d) From your results in table 2,

i) Suggest **two** reasons for addition of sodium chloride to the contents of the tubes (2marks).

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ii) Suggest the part of the alimentary canal (E1, E2 or E3) from which solution A can be obtained. Give **two** reasons for your answer. (3marks)

Part

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Reasons.

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3. You are provided with specimens T,U and V. Study them carefully and answer the questions that follow:

a) Describe the stem of specimen T and U.

T

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U

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b) Based on the features of the stem and leaves, give the class to which specimen T and U belong.

Specimen T U

Class……. ……

c) How are the leaves of each of the specimens suited for the survival of the live specimen T,U and V in their environment?

i) Leaf of specimen T

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ii) Leaf of specimen U

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iii) Leaf of specimen V

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d) How is specimen V suited to live in its habitat?

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Confidential

P-Rat

Suspension **E- extract from rat pellet.**

Petri dishes

Iodine test

Copper sulphate and Sodium hydroxide

Benedict's reagent

Heat source

Thermometers

Test tubes,

Sodium chloride solution

Solution A- 2% pure diastase enzyme solution

Microscope

Hand lens

T- Cyperus/nut grass plant

U Bidens/black jack plant

V- Lettuce plant