

Name of School:.....

Candidate's Name:.....

Centre No. /Index No:..... Signature:.....

P530/3
Biology Practical
Paper 3
3 ¼ Hours



ELITE EXAMINATION BUREAU MOCK 2019

Uganda Advanced Certificate of Education

BIOLOGY PRACTICAL

PAPER 3

3 Hours 15 minutes

INSTRUCTIONS TO CANDIDATES

- ✓ *Answer all the questions in the spaces provided*
- ✓ *Use well sharpened pencil for drawings*
- ✓ *Untidy work shall not be marked.*

For examiner's use only

Questions	Marks	Examiner's initials
1		
2		
3		
Total		

1. You are provided with freshly killed specimen Z. Examine it carefully and answer the questions that follow;

a) Examine the skin in the trunk region from the dorsal side.

i) Describe the structure and nature of the skin from the dorsal side of the trunk. (3marks)

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ii) Give ecological significance of the aspects of the dorsal skin to the specimen. (3marks)

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b) Study the ventral side of the foot and palm of the limbs of the specimen.

i) Draw the foot and the palm to the same magnification. Do not label. (4marks)

- ii) Suggest an explanation for the differences observed on the foot and palm.
(3marks)

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- c) Dissect the specimen to trace routes of blood flow;
- i) from excretory organs and gonads on the left and hind limb on the right.
 - ii) to anterior half of the gut.
- Draw and label the structures displayed in (i) and (ii) above in one diagram with the heart displaced upwards.
(30marks)

2. You are provided with specimen V and sugar solutions of varying concentrations labelled A, B, C, D, E and F.

a) Measure 8cm^3 of each solution and transfer the solutions into test tubes labelled correspondingly. Using a cork borer, obtain 6 equal sized cylinders of 0.5cm diameter and equal length of 6cm from specimen R. Immerse a cylinder into each of the solutions in the tubes and leave to stand for 1hour.

i) After 1hour, transfer solution A into a measuring cylinder and record the final volume in table 1 below. Repeat the procedure with the rest of the remaining solutions. (6marks)

Table 1.

Solutions.	A	B	C	D	E	F
Final volume.						
Initial volume: final volume						

ii) Calculate the initial volume to final volume ratio of the solutions in the spaces provided in table 1 above.

b) From the table;

i) Suggest the solution with the concentration nearest to that of the cell sap of specimen R. Explain your answer. (3marks)

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ii) Arrange the solutions A to F in order of decreasing osmotic potential. Explain your answer. (7marks).

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c) Explain the results obtained in test tubes A, D and E.

Test tube A.

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Test tube D

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Test tube E.

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d) Examine the cylinders placed in solutions B and F (*4marks*)

i) Compare the physical condition of the cylinders from the two solutions.

Cylinder from solution B	Cylinder from solution F

- ii) Suggest the ecological significance of your observations in (d) (i) above in the life cycle of the specimen R. (3marks)

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3. You are provided with specimens **P, Q, R, S** and **T**.

- a) State **three** observable differences between specimens P and S. (3marks)

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- b) Using a hand lens, examine the tarsus of the hind limb of specimens R.

- i) Draw and label. (5marks)

- ii) Give the ecological significance of the structure of each tarsus. (3marks)

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c) Examine the mouth parts of specimens S and T, using a hand lens.

Draw and label the mouth parts of specimens S and T. (5marks)

d) Using features of the abdomen only, construct a dichotomous key to identify specimens P,Q,R,S and T. (6marks)

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