

NAME: .....INDEX NO. ....

SCHOOL: ..... SIGNATURE:.....

**P 530/3**  
**BIOLOGY**  
**PAPER 3**  
**UNNASE Joint Mock Examinations**  
**July/August 2015**  
**3 Hours.**

**UNNASE JOINT MOCK EXAMINATIONS 2015**  
*Uganda Advanced Certificate of Education*  
**BIOLOGY PRACTICAL**  
**PAPER 3**  
**3HOURS**

**INSTRUCTIONS TO CANDIDATES.**

- ❖ *Answer all questions*
- ❖ *Write answers in the spaces provided. Additional sheets of paper must not be inserted in the booklet.*

<b>FOR EXAMINERS' USE ONLY</b>		
<b>Question</b>	<b>Marks</b>	<b>Examiner</b>
1		
2		
3		
Total		

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

a) Open the mouth of the specimen widely. Examine the roof / cleft and floor of the mouth.

i) State three observable differences between the roof/cleft and floor of the mouth. (3 mks)

Roof/ Cleft	Floor
<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

ii) Examine the teeth of the specimen. State the dental formula ( 1 mk)

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iii) Open further the mouth of the specimen exposing the teeth, examine the front and back of the incisors; state your observation, ( 1 mk)

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iv) What is the significance of your observation stated in (a) (iii) above ( 1 mk)

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b) Place the specimen with its ventral side upper most, examine it and identify its sex giving a reason ( 2 mks)

Sex: .....

Reason: .....

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c) i) Measure the tail length. .... (1 mk)

ii) Measure the body length ..... (1 mk)

iii) State the ratio of tail length: body length (1 mk)

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iv) What is the significance of the ratio stated in c (iii) above (3 mks)

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d) Draw and label the ventral side of the right fore foot of the specimen R ( 6 mks)

e) Dissect the specimen to display blood vessels draining the head, neck and thoracic regions with the heart displaced to its right. Draw and label. ( 20 mks)

2. You are provided with specimen Z. Remove a fleshy scale leaf with a razor blade, cut the inner epidermis into six (6) squares each 1cm x 1cm x 1cm x 1cm. Peel off each square of epidermal cells and place it in distilled water in a petri dish for 5 minutes. Label six (6)

test tubes and into each, place  $10\text{cm}^{-3}$  of sucrose solution of the following concentration 0.3, 0.4, 0.5, 0.6, 0.7 and  $1.0\text{mol dm}^{-3}$ .

- a) Put one piece of epidermis into each test tube and gently shake the contents. Leave the tissue in solutions for 20 minutes. After 20 minutes, remove the piece of epidermis from each test tube and mount it in a drop of solution in which it is immersed.

Observe under low power and count all cells visible and record in table I, then count all the plasmolysed cells and record them in table I.

**Table I**

<b>Molarity of sucrose concentration in <math>\text{mol dm}^{-3}</math></b>	<b>Total number of cells</b>	<b>Number of plasmolysed cells</b>
0.3		
0.4		
0.5		
0.6		
0.7		
1.0		

- b) i) Calculate the percentage of plasmolysed cells ( 7 mks)

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- ii) Using the same axes, plot a graph showing how percentage plasmolysis varies with Molarity of sucrose. (Graph paper) (11 mks)

- c) i) State what is being investigated in the tests. ( 1 mk)

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ii) Explain the results of your tests. ( 3mks)

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3. You are provided with specimen C<sub>1</sub>, C<sub>2</sub>, C<sub>3</sub>, C<sub>4</sub>, and C<sub>5</sub>.

a) Classify specimen C<sub>1</sub> under the following taxa. (2 mks)

i) Kingdom .....

ii) Phylum .....

iii) Class .....

iv) Order .....

b) Carefully examine specimen C<sub>1</sub>. Give three observable characteristics which make it to be classified in the class stated in (a) (iii) above. (3 mks)

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c) Draw and label the anterior view of the head of specimen C<sub>1</sub>. (10 ½ mks)

d) Describe the features on the head of specimens C<sub>1</sub>, C<sub>2</sub>, C<sub>3</sub>, C<sub>4</sub> and C<sub>5</sub>. (12 ½ mks)

Specimen	Characteristics
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C <sub>1</sub>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
C <sub>2</sub>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
C <sub>3</sub>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
C <sub>4</sub>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

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C <sub>5</sub>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

e) Construct a dichotomous key to identify the specimens. ( 4 mks)

**END**