Candidates Name:.....

Index No: .....|..... Signature .....

P530/3
BIOLOGY PARCTICAL
PAPER 3
JULY/AUGUST 2023
3 ¼ HOURS

ASSHU ANKOLE JOINT MOCK EXAMINATIONS 2023

Uganda Advanced Certificate of Education

BIOLOGY PRACTICAL

P530/3

Time 3 hours 15 minutes.

INSTRUCTIONS

- This paper consists of **three** Questions.
- Answer **all** the Questions
- Write the answers in the spaces provided
- No additional Sheets of Paper should be inserted.
- You are not allowed to start working with-in the first 15 minutes. You are advised to use this time to read through the paper and ensure that you have all the Apparatus. Chemicals, and Specimens you require.

For Examiner's use only

Question	Marks	Examiner's Signature
1		
2		
3		
Total		

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1. You are provided with Specimen Z which is freshly killed.

a) (i) Identify the sex of the Specimen. **(1mark)**

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(ii) Describe the structures you used to determine the sex of the Specimen. **(2marks)**

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b) (i) Examine the head of Specimen Z. State how the structure of the head and eyes of the animal enhance its survival in its natural habitat. **(5marks)**

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(ii) Open up the Specimen to display muscles of the thoracic region and neck. Draw and label the muscles and structures in the thoracic and neck region. **(12marks)**

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c) Dissect the Specimen Z to display the contents of the abdominal cavity. Displace the duodenal loop to the right of the Specimen, and then turn the bulk of the ileum to the left of the Specimen. Displace the colon and the caecum downwards to the right of the Specimen to display the blood vessels that carry blood from the alimentary canal to the Liver which is displaced anteriorly. Draw and label. **(20marks)**
(NB: Keep the dissected specimen for use in Question 2).

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2. You are provided with Solutions **A** and **B**.

a) Carry out Tests in Table I on the Solutions A and B. Record your tests, observations and deductions in the table **(14marks)**

Table 1

Tests	Observations	Deductions
Benedict's test	A	
	B	
Biuret's test	A	
	B	
Iodine test	A	
	B	

b) (i) Cut off the pancreas from Specimen Z. Place the pancreas in a mortar, grind into a fine paste. Add 3cm^3 of distilled water, stir and leave it to settle. Decant into a Test Tube to obtain extract and label it Extract C.

(ii) Cut open the stomach from Specimen Z. Peel the inner layer of the stomach and place it in a mortar, grind into fine paste. Add 3cm^3 of distilled water, stir and leave it to settle. Decant into a Test Tube to obtain Extract D.

(iii) Label four Test Tubes and carry out procedures summarized in Table 2

Table 2

Test Tube	Contents
(1)	1cm^3 of Solution A + 1cm^3 of Extract C
(2)	1cm^3 of solution A + 1cm^3 of Extract D
(3)	1cm^3 of solution B + 1cm^3 of Extract D
(4)	1cm^3 of solution B + 1cm^3 of Extract D + 1cm^3 of HCl

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Incubate all the four Test Tubes between $35^0C - 40^0C$ for 1 hour. After incubation divide the contents of each Test-Tube into **two equal** proportions.

c) Carry out Benedict's test on contents of Test-Tubes 1 – 4. Record your observations and deductions in Table 3 **(6marks)**

Table 3

Test tube	Observations	Deductions
1		
2		
3		
4		

d) Repeat Tests in Table1 for nutrient identification in Solution A on contents of test tubes 1 and 2, plus nutrients identified in Solution B on the contents of Test Tubes 3 and 4. Record your tests and observations in Table 4 below **(8marks)**

Table 4

Test	Test tube	Observation
	1	
	2	
	3	
	4	

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e) From your results

i) Give two properties of the active Substance in the Extracts C and D **(2marks)**

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ii) Account for differences in the results of contents of Test-Tubes 3 and 4 **(4marks)**

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3. You are provided with Specimens X, Y and U. Examine the Specimens using a Hand-lens.

a) Giving reasons from your observations;

i) Classify the Specimens into the following taxa. **(10marks)**

Specimen X

Phylum: .....

Reasons

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Specimen Y

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Class: .....

Reasons

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Specimen U

Phylum .....

Reasons

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ii) Giving reason suggest the mode of nutrition in specimen U

(2marks)

Mode of nutrition .....

Reason

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b) Describe

i) The location of named structures used for reproduction in each specimen

Specimen X

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Specimen Y

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Specimen U

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ii) Two named vegetative structures in Specimen Y.

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c) Suggest one advantage of Specimens Y and U in colonizing new habitats.

Specimen Y

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Specimen U

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d) Remove one leaf from Specimen X. Observe the reproductive structure under low power of light microscope.

i) Describe the structures observed.

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ii) Explain how the structures observed in d(i) above are adapted for reproduction?

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END

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