

NAME..... REG. NO.....

SIGNATURE

P530/3
Biology Paper
(Practical Paper 3)
July/August 2023
3 ¼ Hours



ACEITEKA MOCK EXAMINATIONS 2023

Uganda Advanced Certificate of Education

S.6 BIOLOGY PRACTICAL

PAPER 3

3 HOURS 15 MINUTES

INSTRUCTIONS TO CANDIDATES:

- This paper consists of **three** sections
- Answer **all** questions
- Answers must be written in the spaces provided. Additional sheets of paper must **not** be inserted in this booklet.
- You are **not** allowed to start working with in the first **15minutes**. You are instead advised to use this time to **read** through the paper and ensure that you have all the apparatus, chemicals and specimens you may require.

For Examiner' Use Only		
Question	Marks	Examiner's signature
1		
2		
3		
Total		

1. Question 1

You are provided with specimen **K** which has been freshly killed.

(a) Display the specimen on the dissecting dish in the usual way, Dissect the specimen to release the skin on the ventral side.

i) Draw the superficial structures in the neck throat and thorax and label only the secretory structures. (07½ marks)

ii) For each of the labelled structures, state the secretion and its role in the life of the animal. (04marks)

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(b) By further dissection, display the thoracic structures. Continue your dissection to expose the structures of air passage and trace the route of blood to the head and fore limbs by clearing off the neck muscles and biceps muscles. Draw and label your dissection without displaying any organ. (22 marks)

2. Question 2

You are provided with solutions **L**, **M** and **N** which are extracts from seedlings at different stages of germination. **L** and **M** are from the same type of seed.

(a) i) Carry out the following tests in tables **1**, **2** and **3** to determine the nutrient content of each solution. Record your tests, observation and deductions in the tables.

Table 1.

Iodine Test		Observations	Deductions
	L		
	M		
	N		

(07marks)

Table 2.

Iodine Test		Observations	Deductions
	L		
	M		
	N		

(07marks)

Table 3.

Biuret Test		Observations	Deductions
	L		
	M		
	N		

(07marks)

ii) From your results in the 3 tables above, explain the pattern of nutrient distribution in extracts **L** and **M**.

(03 marks)

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(b) i) To 4cm³ of solution **M**, add 3cm³ of solution **N** in a test-tube. Incubate at **35-40°C** for **30** minutes. After the time duration, carry out the tests in the table 4 on the content of the test tube to establish the effect of one extract onto the other. Record your observations and deductions.

Table 4.

Name of test	Observations	Deductions
Iodine		
Reducing sugars		
Biuret		

(07marks)

ii) Relate your above results of the experiment to the physiology of germination. (04 marks)

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iii) Suggest why preliminary tests were carried out on the extract before mixing them.

(04 marks)

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Question 3

You are provided with specimens **P, Q, R, S, T** and **U**. Examine the external structures of specimens using a hand lens/ low power magnification.

(a) State three structural characteristics common to all the specimens. (03 marks)

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(b) Observe under low powder magnification and describe the structural features of the mouth parts of the following specimens, relating the structure to the function. (06 marks)

i) Specimen **P**

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ii) Specimen **U**

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(c) Observe the mouth parts of specimen **R** under low power. Draw and label fully.

(07 marks)

(d) Using a hand lens give three structural similarities and differences in the features observed on the hind limbs of specimens **R** and **S**.

(06marks)

i) Similarities

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ii) Differences

R	<i>S</i>

(e) By limiting yourself to the structures used for locomotion and sensitivity, construct a dichotomous key to identify the specimens in the order **P** to **U**. (08marks)

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