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553/2
BIOLOGY
(Practical)
Paper 2
Jul./Aug. 2019
2 Hours



**SENIOR EDUCATION CONSULTANTS (SEC)
JOINT MOCK EXAMINATIONS, 2019**

Uganda Certificate of Education

**BIOLOGY
(Practical)**

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

- *This paper consists of three questions.*
- *Attempt all questions.*
- *Drawing should be made in the spaces provided.*
- *Use sharp pencils for your drawings.*

For Examiner's use Only		
Q.1		
Q.2		
Q.3		
Total		

1. You are provided with specimen K. cut out four equal cubes each measuring 1cm x 1cm x 1cm.

- Label four test tubes T₁, T₂, T₃ and T₄
- Add 3cm³ of hydrogen peroxide to test tubes T₁, T₂ and T₃.
- Add 3cm³ of distilled water to test tube T₄.

(a) Carryout tests on the cubes following the instructions in the table below.
Record your observations and deductions. (08 marks)

Tests	Observations	Deductions
(i) To test tube T ₁ add one whole cube.		
(ii) To test tube T ₂ , add one cube after cutting it into smaller pieces		
(iii) To test tube T ₃ , add one whole cube after boiling it for 5 minutes.		
(iv) To test tube T ₄ , add one whole cube		

(b) Name the active substance in K. (½ mark)

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(c) Name factors being investigated in the experiment . (02 marks)

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(d) Explain your results in each test tube above.

(i) Test tube T₁ (02 marks)

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(ii) Test tube T₂ (02 marks)

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(iii) Test tube T₃ (02 marks)

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(02 marks)

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(e) (i) Why was the measurement of the cubes used of the same size? (½ mark)

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(ii) Name one other factors that affects the ingredient in K other than the ones investigated in the experiment. (01 mark)

1. The first part of the document is a header section containing the following information:

- Page No. 1
- Date: 10/10/2020
- Page No. 1

2. The second part of the document is a table with the following columns:

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2. You are provided specimen L and M which are flowers. Examine them and answer the questions that follow.

- (a) Giving reason, state the type of pollination which occurs in specimen L and M. (03 marks)

Type of pollination

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Reason

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- (b) Describe the following parts of specimen L. (04 marks)

(i) Calyx

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(ii) Corolla

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(iii) Androecium

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(iv) Gynoecium

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- (c) Give three structural differences between L and M on the corolla, sepals and calyx. (04 marks)

	Specimen L	Specimen M
(i)		
(ii)		
(iii)		
(iv)		

- (d) Using a razor, cut specimen M longitudinally, starting from the flower stalk through the ovary and petals.
Draw and label a longitudinal section of specimen M and state your magnification. (07 marks)

- (e) Give the importance of the corolla arrangement of specimen L.

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3. You are provided with specimens O, P, Q and R which are freshly killed animals using hand lens where possible, observe the specimens and answer the questions that follow.

- (a) Specimens O, P, Q and R belongs to the same phylum. State three reasons why they belong to same phylum. (03 marks)

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- (b) Examine carefully the shape of the abdomen, eyes, wings and legs of specimens O, P, Q and R with the aid of a hand lens. Describe their body parts and record two structural observable features of each specimen in the table below. (08 marks)

Body parts	Specimens O	Specimens P	Specimens Q	Specimens R
Shape of abdomen				
Eye				
Wings				

Legs				
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- (c) Using the characteristic features of the abdominal shape, eyes, wings, and legs of each specimen in (b) above. Construct a dichotomous key to identify them. (03 marks)

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- (d) Place specimen O with its dorsal part upper most, using a hand lens, locate the neck region and cut it off. Draw and label the dorsal view of the head region of specimen O. State your magnification. (06 marks)

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END

Each candidate must be provided with:

- Piece of liver labeled K (measuring 1 cm x 1 cm x 1 cm)
- 10cm³ of hydrogen peroxide
- 4cm³ of distilled water
- 4 test tubes
- Labels

- L – Crotonaria

- M – Morning glory

- Freshly killed ;
 - Solider termite labeled O
 - Mature cockroach labeled P
 - House fly labeled Q
 - Tick labeled R
- Hand lens
- Common laboratory reagents

- Heat source