

Candidates Name:

Signature: Index No:

553/3

BIOLOGY

(PRACTICAL)

PAPER 3

JULY/AUG 2023

2 hours

ASSHU ANKOLE JOINT MOCK EXAMINATIONS 2023

Uganda Certificate of Education

BIOLOGY

(PRACTICAL)

Paper 3

2 hours

INSTRUCTIONS TO CANDIDATES

- Answer **all** questions
- All answers should be written in the spaces provided
- Drawings should be made in the spaces provided
- Use sharp pencils for your drawings.
- Coloured pencils or crayons should not be used.
- No additional sheets of writing paper are to be inserted in the booklet.
- Work on additional sheets will not be marked.

FOR EXAMINER'S USE ONLY

Question	Marks	Examiner's No and Initials
1.		
2.		
3.		
TOTAL		

1. You are provided with a plant structure Q, solution H and distilled water. Using cork borer and razor blade, make five cylinders from plant structure Q. Trim each of the cylinders to measure 2.0cm in length. Label five test tubes as 1, 2, 3, 4 and 5. Place one cylinder in each of the test tubes. Boil cylinder in test tube 5, pour off the hot water and allow the cylinder to cool while inside its test tube.
- a) Carry out the tests in Table 1 below. Record your observations and the time taken for each of the cylinders to float. (7 ½ marks)

Table 1

Procedure	Observation	Time in seconds
i) To the cylinder in test tube 1, add 5cm ³ of solution H		
ii) To the cylinder in test tube 2, add 2cm ³ of distilled water, followed by 3cm ³ of solution H.		
iii) To the cylinder in test tube 3, add 4cm ³ of distilled water, followed by 1cm ³ of solution H.		
iv) To the cylinder in test tube 4, add 5cm ³ of distilled water.		
v) To the cylinder in test tube 5, add 5cm ³ of solution H		

- b) State the factors being investigated in the experiment. (2marks)

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c) Explain your results obtained in the following test tubes (8marks)

i) Test tube 1

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ii) Test tube 3

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iii) Test tube 4

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iv) Test tube 5

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d) What would be the effect of using several smaller pieces of cylinders of structure Q in test tube 1? (1 ½ marks)

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2. You are provided with plant structures K, L and M. Examine them carefully and use them to answer the questions that follow.

a) (i) Give four main parts found in specimens K, L and M (02marks)

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(ii) State any four differences between specimen K and specimen L
Differences (04marks)

Specimen K	Specimen L
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b) Describe the following parts of specimen L and specimen M

Parts	Specimen L	Specimen M
Calyx		
Corolla		

c) (i) State the type of pollination in specimen K. Give reasons for your answer.

(2marks)

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(ii) How is specimen L adapted to carry its function (2marks)

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d) Remove some parts of specimen M to expose the essential parts.

Draw and label the essential parts of specimen M. (6marks)

3. You are provided with specimen T and S which belong to the same kingdom but different phyla. Observe them carefully and answer the questions that follow.

a) Giving reasons, identify the specimens according to their kingdom and phyla. (4 ½ marks)

i) Kingdom
Reasons

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ii) Phylum of specimen S
Reasons

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iii) Phylum of specimen T
Reasons

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b) (i) Measure the length of specimen T and the length of its tail using a long ruler.

(2marks)

Body length

Length of tail

(ii) Calculate the ratio of body length to tail (2marks)

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(iii) Give the significance of the ratio obtained (2marks)

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c) Stroke the specimen T on the lateral side from the head end to the tail end. Repeat the stroking from tail end to head end.

i) Record your observation (2marks)

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ii) Give the significance of arrangement of scales in specimen T. (2marks)

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d) Place specimen T on the table with its right lateral side on the table, the head facing to your left. Draw and label the head. (5marks)

END