

Name: Index No.....
School: Signature:

553/2
BIOLOGY
(PRACTICAL)
PAPER 2
July/August 2018
2 hours



WAKISSHA JOINT MOCK EXAMINATIONS

Uganda Certificate of Education

BIOLOGY

(PRACTICAL)

Paper 2

2 hours

INSTRUCTIONS TO CANDIDATES:

- This paper consists of **three** questions.
- 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. & Initials
1		
2		
3		
TOTAL		

1. You are provided with extracts A and B from same plant organ, but of different plants. You are to investigate the PH and relative abundance of ascorbic acid/vitamin C in these extracts.
 - (a) To 2cm³ of extract A in a test tube, dip in damp red and blue litmus papers. Record your observations in table 1 below.
 - (b) Repeat the above procedure (a) using extract B.
 - (c) Fill in your observation in table I below.

Table 1

Extract	Observation		Conclusion
	Damp blue litmus paper	Damp red litmus paper	
A			
B			

(06 marks)

- (d) Carry out the following tests on the extracts A and B and record your observations and deductions in table II below.

Table II

Test	Observations	Deductions
(i) To 1cm ³ of extract A in a test tube, add 3 drops of Iodine solution.		
(ii) Repeat test (i) above using extract B		
(iii) To 1cm ³ of DCPIP in a test tube add extract A drop by drop until there is no further change. Record the number of drops.		

(iv) Repeat test (iii) using extract B.		
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(11 marks)

- (e) Explain your results in table I above.

(01 mark)

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- (f) Compare results in test (d)(iii) and d(iv) and explain the number of drops used in the tests.

(02 marks)

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2. You are provided with specimens O and P which are plant organs.

- (a) Giving one reason in each case, identify specimens O and P (04 marks)

Specimen	Identity	Reasons
O		
P		

- (b) Using a scalpel/razor blade and without damaging the internal structures, carefully cut around the outside of specimen O so that you obtain two halves. For specimen P, cut it longitudinally through the position of cotyledon to obtain two halves.

- (i) List down four observable features which distinguishes specimen O from specimen P in the table below. (04 marks)

Specimen O	Specimen P

- (ii) Mention two similarities between specimen O and specimen P. (02 marks)

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- (c) Describe how the structures of specimen O are adapted for growth of the specimen. (03 marks)

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- (d) With the help of a hand lens, make a fully labeled drawing of one half of specimen O with internal structures. State your magnification. (07 marks)

3. You are provided with specimens W, X, Y and Z.

- (a) Examine the specimens W, X, Y and Z and state three external features which are characteristic of the class to which the specimens belong.

(03 marks)

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Turn Over

- (b) Give four (4) differences between specimen Y and specimen Z. (04 marks)

Specimen Y	Specimen Z

- (c) Observe the specimens W, X, Y and Z and complete the table below about the structures of the specimens. (04 marks)

Specimen	Number of wings	Number of legs
W		
X		
Y		
Z		

- (d) Using the characteristics in the table above, construct a dichotomous key to identify the specimens. (03 marks)

- (e) Place specimen W ventral side upper most. Draw and label the last three abdominal segments of the specimen. State your magnification. (06 marks)

END

Each candidate should be provided with the following;

- 10cm³ of extract A
- 10cm³ of extract B

N.B:

- Squeeze 2 ripe medium sized guavas in 1 litre of distilled water to make extract A.
- Squeeze 2 ripe medium sized tomatoes in 1 litre of distilled water to make extract B.
 - 2 leaflets of blue litmus paper
 - 2 leaflets of Red litmus paper
 - 5 test tubes
- **One mature freshly killed specimen of:**
 - Cockroach labelled W
 - Soldier termite labelled X
 - Tick labelled Y
 - Housefly labelled Z
 - Bean seed labelled O
 - Maize grain labelled P

N.B: Bean seed and maize grain should be soaked for one day.

- A hand lens
- A razor blade/scalpel
- Heat source

END