

Name..... Index Number.....

Student's Signature.....

**231/3  
BIOLOGY  
PAPER 3  
PRACTICAL  
JUNE, 2017  
1 ¾ HOURS**

**SUNSHINE SECONDARY SCHOOL  
Kenya Certificate of Secondary Education  
BIOLOGY  
Paper 3  
Practical  
TIME: 1 ¾ Hours**

1. You are provided with 6 test tubes, solution C, droppers, a white tile, iodine solution, 0.1% sodium chloride, 1.4% sodium chloride, Benedicts solution, solution A, water bath and labels.
- Label three tests S, T and U. Into each test-tube, place 3ml of solution C.
  - Put a drop of solution C on a white tile and add a drop of iodine solution.

Record your observation. (1mk)

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C) Add 3 drops of 0.1% sodium chloride solution and 2ml of solution A to test tube T.

To test-tube U add three drops of 1.4% sodium chloride solution and 2ml of solution A. Sodium chloride is a source of sodium ions. Place the test tube S, T and U in a water bath maintained at 37°C for 30 minutes. Using a drop of the solution from each test-tube repeat the procedure in (a) above and spare the rest for the next question. Record your observation in the table below. (3mks)

Test-tube	Observation at the end of experiment
S	
T	
U	

- c) i) Put 2cm<sup>3</sup> of solution from test-tube S in a clean test-tube and add 2cm<sup>3</sup> of Benedict solution, shake then heat the mixture to boil. Record your final observations in the table below. Repeat the procedure for solution T and U. (3mks)

Test-tube	Observation at the end of experiment
S	
T	
U	

ii) Account for your results in test-tube T and U. (3mks)

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d) Why was the test-tube S included in the experiment? (1mk)

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e) Suggest the identity of solution A. (1mk)

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f) Why was the water bath maintained at 37°C. (1mk)

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2. You are provided with specimen labelled M.

a) Using floral parts and the leaves, classify the plant from which part M was obtained into class and give reasons.

Class -----

Reasons -----

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----- (3mks)

b) Suggest the pollinating agent for the specimen M and give reasons.

Pollinating agent ----- (1mk)

Reasons -----

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----- (2mks)

- c) Dissect the flower longitudinally into two equal parts and examine one of the parts using a hand lens.

Describe the following parts

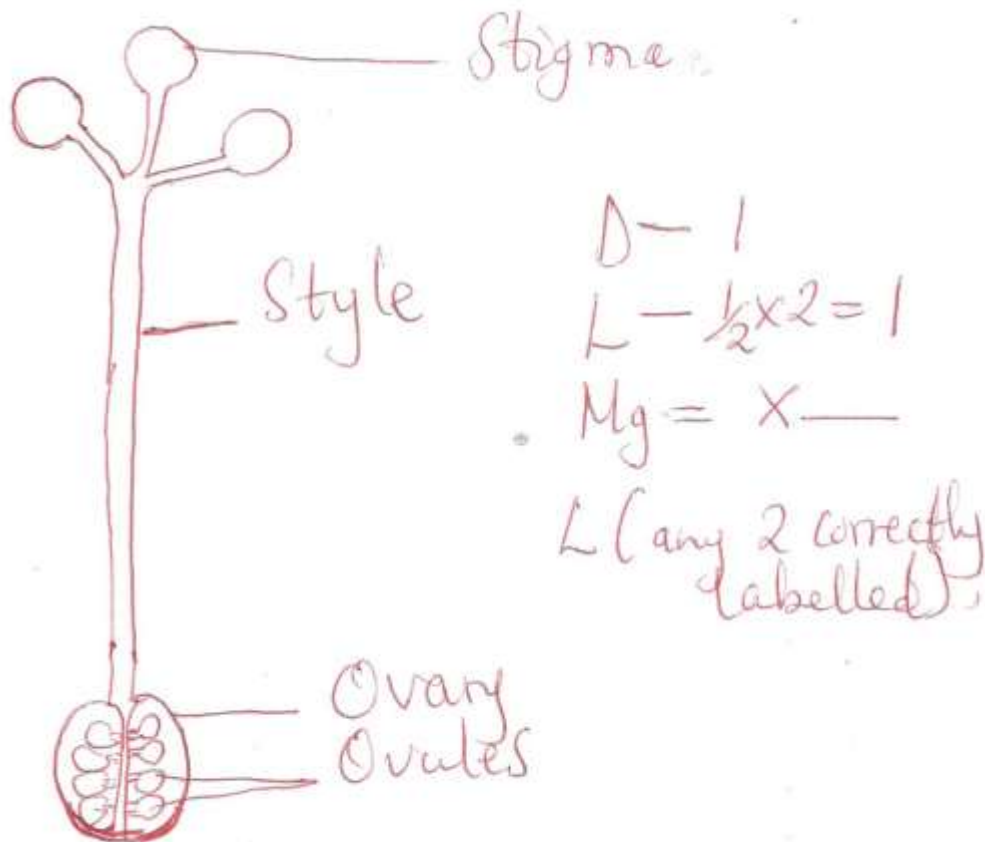
- i) Androecium (3mks)

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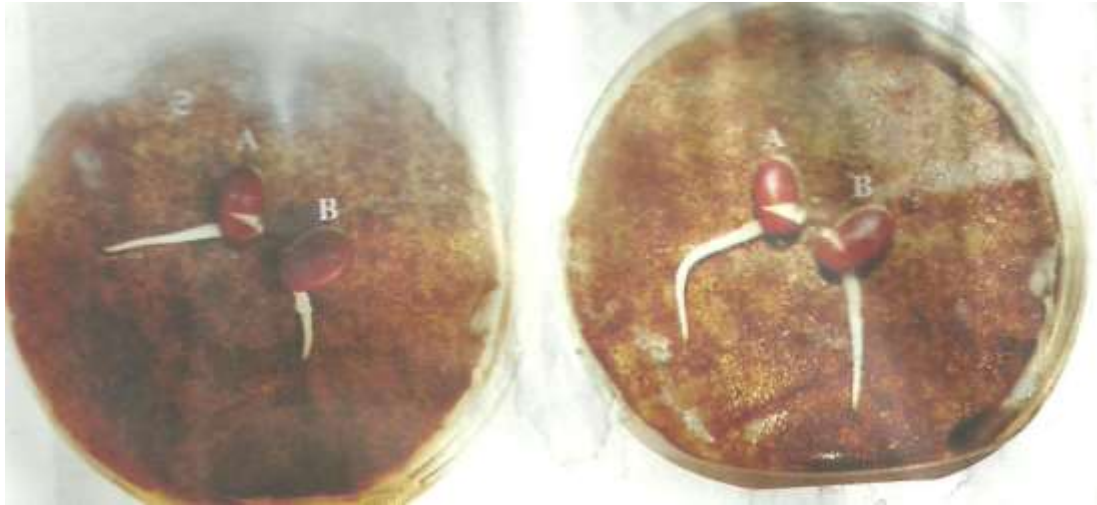
- ii) Gynoecium (3mks)

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- d) Use the hand lens to observe the pistil closely, draw the pistil only and label the parts. (3mks)



3. The photographs below show an experiment that was set to investigate a certain response in bean seedlings. Examine them.



At the beginning

after 24 hours

- a) Which response was being investigated? (1mk)

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- b) Account for the observed results for seedling A after 24 hours. (5mks)

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c) Explain why in seedling B the root continued growing straight down. (2mks)

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d) Explain the significance of the response you stated in (a) above to the plant. (2mks)

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b) Below is a photograph of a mammalian bone, labelled Q.



i) Identify the bone (1mk)

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ii) State how the bone is adapted to its functions. (3mks)

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iii) Name the bone that articulates with the bone Q at part labelled X. (1mk)

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iv) Name the specific type of joint formed at this articulation. (1mk)

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