

KALA TRIAL EXAMINATION-2026
Kenya Certificate of Secondary Education form 4

231/3

- **BIOLOGY** -**Paper 3**JULY 2026 **1hrs 45min**

Name:
 Class:
 School:

Admission No:
 Date:
 Signature:

Instructions to Candidates

- Write your name, class, admission number, school, date and signature in spaces provided above.
- Answer **all** questions in the spaces provided below each question.
- You are required to take the first 15 minutes of the 1³/₄ hours allowed for this paper reading through the whole paper before commencing your work.
- The paper consists of 6 printed pages.
- Additional pages must not be inserted.
- Candidates should check the question paper and ascertain that all the pages are printed as indicated and that no questions are missing
- Candidates should answer all the questions in English.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	13	
2	13	
3	14	
Total Score	40	

1. You are provided with specimen labelled **Q** and the following reagents:

- Dilute hydrogen peroxide
- Dilute hydrochloric acid
- Dilute sodium hydroxide

You have also been provided with the following apparatus:

- Four boiling tubes
- 10 ml measuring cylinder
- Scalpel

Procedure

- (i) Peel specimen **Q**.
- (ii) Label the boiling tubes **A**, **B**, **C** and **D**.
- (iii) Cut four pieces of peeled specimen **Q** each measuring 20 mm × 10 mm × 10 mm.
- (iv) Put two of the pieces into boiling tube **A**.
- (v) Macerate (chop into tiny pieces) two of the pieces. Place equal amounts of the macerated specimen in boiling tube labelled **B** and **C**.
- (vi) Cut one piece of specimen **Q** measuring 10 mm × 10 mm × 10 mm and place it into boiling tube labelled **D**.
- (vii) Add 3 cm³ of dilute sodium hydroxide solution in boiling tube **A**, **C** and **D** and add about 3 cm³ of dilute hydrochloric acid in boiling tube **B**.
- (viii) Add about 10 cm³ of hydrogen peroxide into each of the four boiling tubes.
 - (a) Observe the amount of effervescence in each of the boiling tubes and complete the table below. (7 marks)

Boiling tube	Amount of effervescence observed	Explanation
B		
C		
D		

(b) Explain why the results of boiling tube **A** differed from that of boiling tube **D**. (4 marks)

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(c) Suppose a piece similar to the one put in boiling tube **D** was initially boiled for 5 minutes and the cooled before being subjected to the same conditions as those in boiling tube **D**.

(i) Suggest the observation in terms of amount of effervescence that would have been made. (1 mark)

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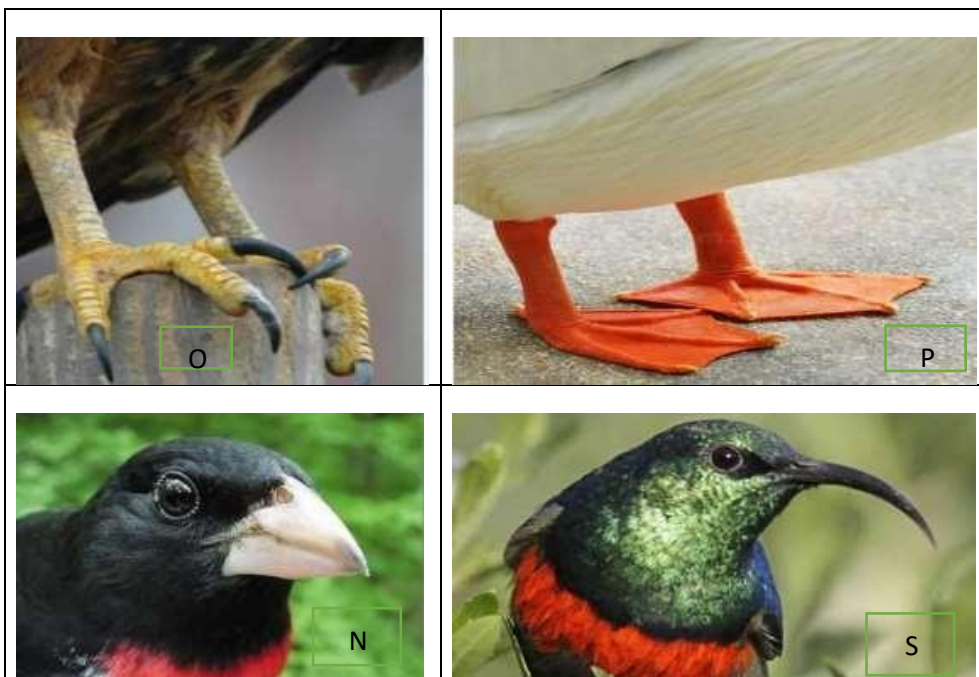
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(ii) Explain the observations made in (c) (i) above. (1 marks)

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2. The photographs below belong to specimens of organisms of the same class. Examine them and answer the questions that follow.



- a) Using **observable feature(s) only**, name the class of these specimens and give the reasons for your answer. (3 marks)

Class.....

Reasons

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- b) (i) Name the type of evolution exhibited by the organism. (1mark)

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- (ii) Name the type of structures indicated by the type of evolution named in b(i) above. (1 mark)

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- c) From the observation suggest **two** features responsible for the different types of beaks in specimen N and S. (2 marks)

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- d) With a reason, name the type of feed eaten by the organisms in photograph O and S. (4 marks)

- (i) Photograph O.....

Reason

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- (ii) Photograph S.....

Reason

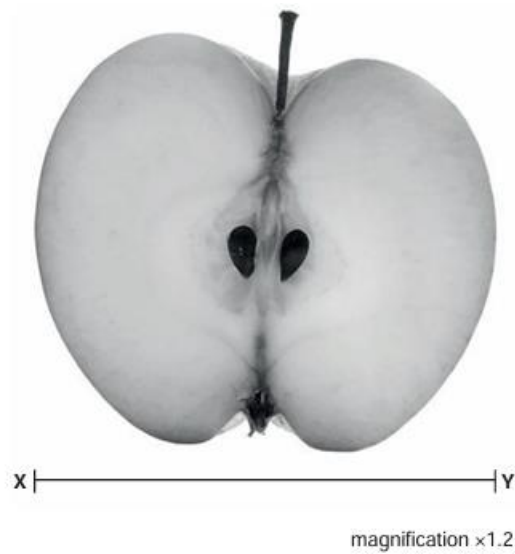
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- e) Using **observable features only** name two types of locomotion by specimen P above and the structure involved. (2 marks)

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3. Study photograph below showing the cut surface of a type of fruit and specimen **R** and **T**.



- (a) Name the type of fruit shown in the photograph. (1 mark)

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- (b) Identify the type of carpel from which the type of fruit named in (a) above is formed. (1 marks)

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- (c) On the photograph, label any **four** parts. (4 marks)

- (d) (i) Name the agent of dispersal of the fruit in the photograph. (1 mark)

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- (ii) Explain how the fruit is adapted to the agent of dispersal named in (d) (i) above. (2 marks)

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- (e) Calculate the actual width of the fruit from point **X** to **Y**. (Show your working). (3 marks)

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(f) Identify two differences between specimen **R** and specimen **T**. (2 marks)

Specimen R	Specimen T