

THE ELITES JET



231/3

BIOLOGY

Paper 3

PRE-MOCK

March 2025 – Time: 1¼ hours

Name Adm No..... Class.....

School..... Date..... Sign.....

INSTRUCTIONS TO CANDIDATES

- (i) Write your name and index number in the spaces provided at the top of this page.
- (ii) Answer **all** questions.
- (iii) You are required to spend the first 15 minutes of the 1¼ hours allowed for this paper reading the whole paper carefully before commencing your work.
- (iv) Answers must be written in the spaces provided in the question paper. Additional pages must not be inserted.
- (v) The paper consists of **8** printed pages.
- (vi) Candidates should check to ascertain that all the pages are printed as indicated and that no questions are missing.
- (vii) Candidates **MUST** answer the questions in English
- (viii) Candidate may be penalized for recording irrelevant information and for incorrect spelling especially of technical terms

For Examiners Use Only

Question	Maximum Score	Candidate's Score
1	16	
2	10	
3	14	
Total score	40	

1. You are provided with the following

- Four test tubes in a test tube rack
- Means of labelling
- Dilute hydrochloric acid
- Solution **L1**
- Solution **L2** – solution **L2** is the same solution as **L1** only that it has been boiled.
- Water-bath maintained at 37.0°C
- Egg white suspension

Procedure

- Label the four test tubes as **A**, **B**, **C** and **D**.
- Into each test tubes labelled place about 2.0cm^3 of egg white suspension.

NB. Reagent containing egg white suspension should be thoroughly shaken before its contents is used.

- Add three drops of dilute hydrochloric acid into test tubes **B**, **C** and **D**.
- Add 1.0cm^3 of **L1** into test tubes **A** and **C**.
- Add 1.0cm^3 of **L2** into test tube **D**.
- Place all the four test tubes and their contents in a water bath and place them in test tube rack and observe the appearance of contents of each test tubes.
- Tabulate your results in the table provided below.

a) Tabulate results in the table given below

(4 marks)

Test tube	Content	Appearance of the contents after fifteen minutes
A		
B		
C		
D		

b) Account for your results in test tube C.

(3 marks)

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- c) Explain the difference in results between test tube C and D. (2 marks)

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- d) Why was the water-bath maintained at 37.0°C (1 mark)

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- e) Identify the secretory cells that produce **L1** and hydrochloric acid along a section of human gut.

L1 (1 mark)

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Hydrochloric acid (1 mark)

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- f) Describe:

- i) The type of solution formed when egg white is dissolved in water. (2 marks)

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- ii) The role of the above named in (f)(i) above in a cell. (2marks)

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2. You are provided with the following:

- 1cm³ cube of a portion of liver.
- 4.0cm³ of liquid **R** in a boiling tube.

a) Using a pair of forceps transfer the cube into the content of the boiling tube and observe. State the observations made during the reaction. (2 marks)

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b) i) What is the likely identity of liquid R. (1 mark)

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ii) Explain the reason for your answer in (b)(i) above. (2 mark)

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c) Explain any two practical ways of making the above reaction to proceed faster. (4 marks)

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d) Name the organ in a human body that work together with the liver to bring about blood sugar regulation (1 mark)

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3. You are provided with the specimens labelled **P, Q, S, T, U, V, W, X** and **Y**. Use the Dichotomous key provided below to identify the specimen **P, Q, S, T, U, V** and **W**.

1. (a) Leaf simple..... go to 2
 (b) Leaf compound.....Astraceae
2. (a) Leaf green..... go to 3
 (b) Leaf purple.....Commelinaceae
3. (a) Leaf with parallel venation.....Graminaceae
 (b) Leaf with network venation..... got to 4
4. (a) Leaf margin smooth..... go to 5
 (b) Leaf margin serrated..... go to 6
5. (a) Leaf lamina hairy..... Solanaceae
 (b) Leaf lamina not hairy..... go to 8
6. (a) Leaf succulent..... go to 7
 (b) Leaf not succulent..... Malvaceae
7. (a) Leaf with pointed apex..... Crassulaceae
 (b) Leaf with rounded apex..... Cassia
8. (a) Leaf ovate..... Nystiginaceae
 (b) Leaf lanceolate..... Anacardiaceae

- a) Write down the steps followed to arrive at the correct identification of each specimen. (7 marks)

Specimen	Steps	Identity
P		
Q		
W		
S		
T		
U		
V		

- b) Identify the sub-division of Kingdom Plantae in which specimen **X** belongs to. Give reasons based on observable features

Sub-division (1 mark)

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Reasons (2 marks)

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- c) Explain how the reproductive structure of specimen **X** makes it have a higher chances of survival than specimen **Y**. (3 marks)

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d) Identify the type of stem present in both **X** and **Y**.

(1mark)

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