

231/3

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– **BIOLOGY** –  
(PRACTICAL)

**Paper 3**



**Apr. 2021 – 1¾ hours**

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

Candidate's Signature ..... Date .....

**Instructions to Candidates**

- (a) Write your name and index number in the spaces provided above.
- (b) Sign and write the date of examination in the spaces provided above.
- (c) Answer **all** the questions in the spaces provided.
- (d) You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper reading the whole paper carefully before commencing your work.
- (e) Additional pages must not be inserted.
- (f) **This paper consists of 7 printed pages.**
- (g) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**
- (h) **Candidates should answer the questions in English.**

**For Examiner's Use Only**

Question	Maximum Score	Candidate's Score
1	13	
2	14	
3	13	
<b>Total Score</b>	<b>40</b>	



1. You are provided with a piece of specimen N and the following reagents:

– Dilute hydrochloric acid

– Dilute sodium hydroxide

– Dilute hydrogen peroxide

– Water

You have also been provided with the following apparatus:

– Three test tubes

– 10 ml measuring cylinder

– Scalpel

### Procedure

(i) Label the test tubes 1, 2 and 3.

(ii) Macerate (chop into tiny pieces) half of specimen N.

(iii) Place equal amounts of the macerated specimen into test tubes 1 and 2.

(iv) Cut the remaining half of the specimen into two equal pieces.

(v) Place one piece into test tube 3 and reserve the remaining piece.

(vi) Add about 2 cm<sup>3</sup> of dilute hydrochloric acid into test tube 1, add about 2 cm<sup>3</sup> of sodium hydroxide into each of test tubes 2 and 3.

(vii) Add about 5 cm<sup>3</sup> of hydrogen peroxide into each of the three test tubes, 1, 2 and 3.

(a) Observe the amount of effervescence in each test tube and complete the table below.

Test tube	Contents	Amount of effervescence observed	Explanation
1			
2			
3			

(10 marks)

- (b) Use the reagents provided to test for the food substance present in the piece of specimen N reserved from (a). Observe and record in the table below.

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Procedure	Observation	Conclusion

(3 marks)

2. You are provided with photographs E, F, K and H, together with specimens G, J, L and M.  
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E



K



F



H

Using observable features in the photographs and specimens provided:

(a) Place with a reason, each of the following organisms in their respective Kingdom, Division or Phylum.

(i) **G** (2 marks)

Division .....

Reason .....

(ii) **E** (2 marks)

Kingdom .....

Reason .....

(iii) **M** (2 marks)

Division .....

Reason .....





(iv) **H** (2 marks)

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Phylum .....

Reason .....

(b) State **two** features in the following organisms that make them to be placed in different Classes:

(i) **F and K** (2 marks)

.....  
.....  
.....

(ii) **J and M** (2 marks)

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.....  
.....

(c) Make a labelled diagram of specimen **L**. (1 mark)

(d) Explain the difference in the mode of reproduction exhibited by **E** and **J**. (1 mark)

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3. You are provided with a specimen labelled P on a tile.

(a) (i) Name the Class to which the specimen belongs. (1 mark)

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(ii) Give **three** reasons for your answer in (a)(i) above. (3 marks)

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(b) State **three** ways by which the organism is adapted to movement in its habitat. (3 marks)

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(c) State **two** functions of the part labelled Q. (2 marks)

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(d) Carefully lift the part labelled Q and observe the underlying structure.

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(i) State the *main* function of the underlying structure observed. (1 mark)

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(ii) State *three* ways by which the structure is adapted to its function. (3 marks)

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