

231/3

— **BIOLOGY** —
(PRACTICAL)

Paper 3



Apr. 2021 – 1¾ hours

Name Index Number

Candidate's Signature Date

Instructions to Candidates

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- (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	
Total Score	40	

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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
- 10ml 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 cm³ of dilute hydrochloric acid into test tube 1, add about 2 cm³ of sodium hydroxide into each of test tubes 2 and 3.
 - (vii) Add about 5 cm³ 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.

Procedure	Observation	Conclusion

(3 marks)

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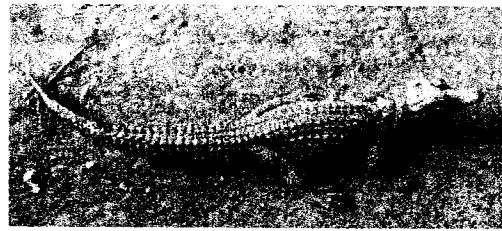
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2. You are provided with photographs E, F, K and H, together with specimens G, J, L and M.



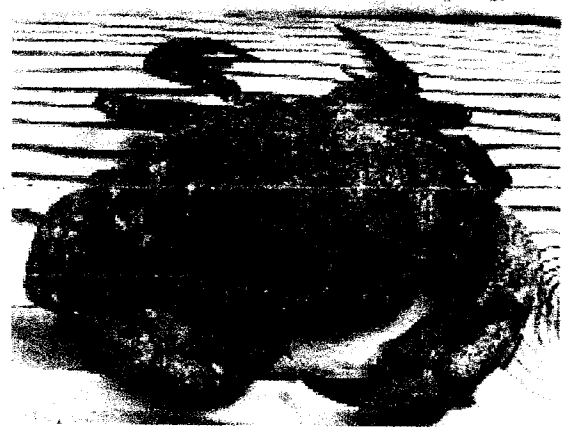
E



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

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

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)

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(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.

(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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