

000126884

Name Index Number

231/3
BIOLOGY
Paper 3
(PRACTICAL)
Nov. 2016
 1¾ hours

Candidate's Signature

Date



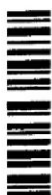
THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
BIOLOGY
Paper 3
(PRACTICAL)
 1¾ hours

Instructions to candidates

- Write your name and index number in the spaces provided above.
- Sign and write the date of examination in the spaces provided above.
- Answer **all** the questions in the spaces provided.
- 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.
- Additional pages must **not** be inserted.
- This paper consists of 6 printed pages.**
- Candidates should check the question paper to 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	Candidate's Score
1	14	
2	13	
3	13	
Total Score	40	



1. You are provided with specimen G.

- (a)
 - (i) Cut off the petiole, about 1.5 cm from the end where the leaf attaches to the stem.
 - (ii) Carefully make several thin cross sections through the piece obtained in (a)(i) above, using a sharp razor blade or scalpel.
 - (iii) Put the sections obtained in water on a Petri dish.
 - (iv) Mount the thinnest section(s) on a glass slide, add a drop of iodine solution provided.
 - (v) Observe the section(s) using a hand lens, then draw a labelled diagram of the section observed. (3 marks)

(b) Account for the following features of specimen G.

- (i) Extensive network of veins (1 mark)
.....
- (ii) Tough leaf blade (1 mark)
.....
- (iii) Strong and extended petiole (1 mark)
.....

(c) State with reasons, the class of plants from which the specimen was obtained.

Class (1 mark)

Reasons:

..... (3 marks)

(d) Explain why the following procedures were necessary during the preparation of the sections for observation.

(i) Putting the sections in water on a Petri dish. (1 mark)

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(ii) Using a sharp scapel/razor blade. (1 mark)

.....

(iii) Adding iodine solution to the section. (1 mark)

.....

(iv) Cutting very thin sections. (1 mark)

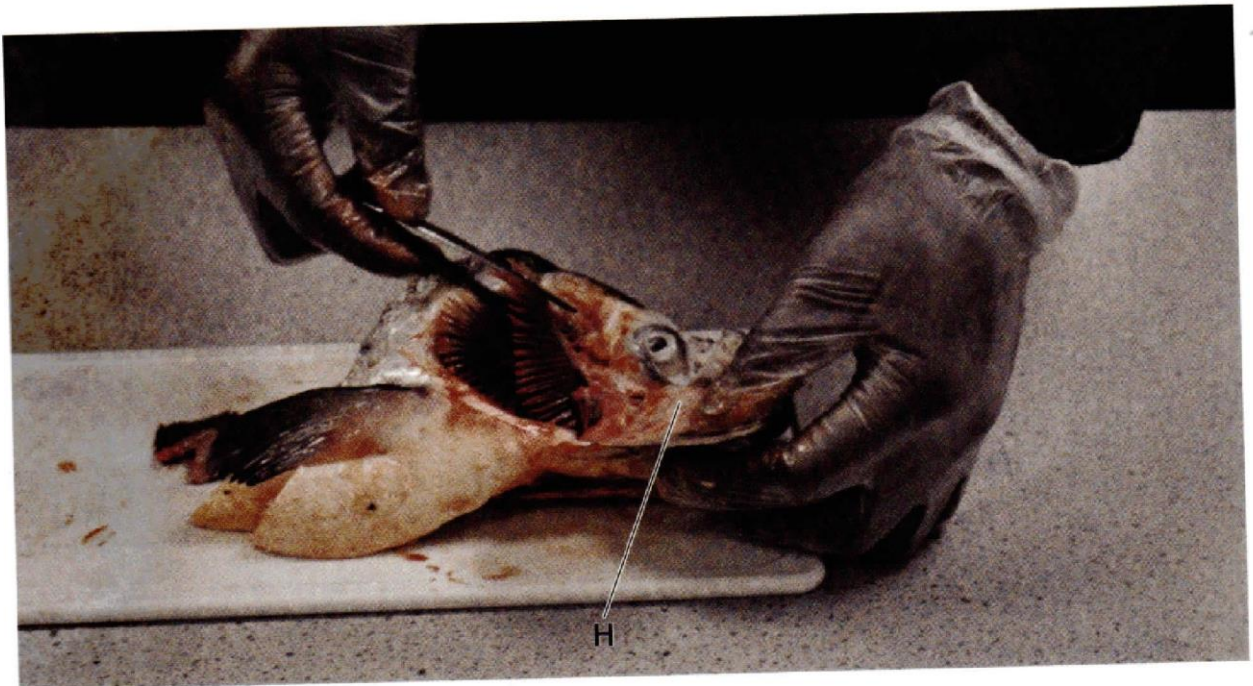
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2. Study the photograph below of some animals in a certain ecosystem and answer the questions that follow.



- (a) State the type of biotic relationship exhibited by the animals shown in the photograph. (1 mark)
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- (b) (i) Identify which of the two animals, E and F, will have the least biomass? (1 mark)
-
- (ii) Give a reason for your answer in (b)(i) above. (2 marks)
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- (c) Explain the concept of "Survival for the fittest" in relation to the organisms illustrated in the photograph. (3 marks)
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-
- (d) Explain **three** visible survival adaptive features for the organisms illustrated in the photograph. (6 marks)
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3. The photograph below illustrates a procedure carried out to study gaseous exchange structures in a certain organism.



- (a) Identify **two** dissecting tools being used in the procedure illustrated. (2 marks)
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- (b) (i) Name the class of the animal in use. (1 mark)
-
- (ii) State any **two** visible characteristics from the photograph to support your answer in (b)(i) above. (2 marks)
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-
- (c) Name the part of the organism labelled H and state its function.
- Name: (1 mark)
- Function: (1 mark)

- (d) (i) Draw the gaseous exchange structure under study and on it, label the site for gaseous exchange. (3 marks)

- (ii) How is the part labelled in (d)(i) adapted to efficient gaseous exchange? (3 marks)

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