THE KENYA NATIONAL EXAMINATIONS COUNCIL **Kenya Certificate of Secondary Education**

231/3

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 13/4 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	





- 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 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
ı			

(10 marks)



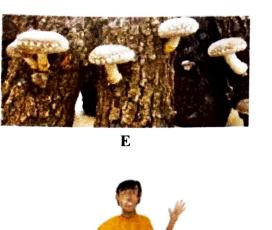
Use the reagents provided to test for the food substance present in the piece of specimen
 N reserved from (a). Observe and record in the table below.

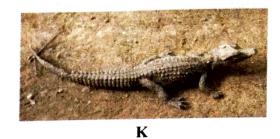
Procedure	Observation	Conclusion	
		1	

(3 marks)

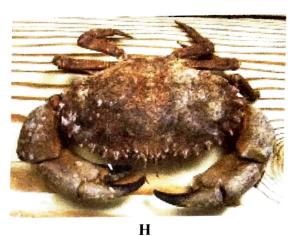
A137

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









Using observable features in the photographs and specimens provided:

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

(i)	G	(2 marks)
	Division	
	Reason	
(ii)	${f E}$	(2 marks)
	Kingdom	
	Reason	
(iii)	M	(2 marks)
	Division	
	Reason	



$\mathcal{X}_{ij}^{(i)}$

	(iv)	н	(2 marks)		
		Phylum			
		Reason			
(b)	State Class	State <i>two</i> 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)		
(c)	Make	e a labelled diagram of specimen L.	(1 mark)		
(d)	Expl	ain the difference in the mode of reproduction exhibited by E and J.	(1 mark)		
	•••••		(Timark)		
	•••••		•••••••••••••••••••••••••••••••••••••••		
	******		•••••••••••		
			•••••		

3.	You	are provided with a specimen labelled 1 of a cite	
	(a)	(i) Name the Class to which the specimen belongs.	(1 mark)
			annennum.
		(ii) Give three reasons for your answer in (a)(i) above.	(3 marks)
			,
	(b)	State three ways by which the organism is adapted to movement in its habitat.	(3 marks)
3			
		Current of the control of the contro	4
	(c)	State two functions of the part labelled Q.	(2 marks)
14.0			



(d)

Carefully lift the part labelled Q and observe the underlying structure.			
State the <i>main</i> function of the underlying structure observed.	(1 mark)		
State three ways by which the structure is adapted to its function.	(3 marks)		

	State the main function of the underlying structure observed. State three ways by which the structure is adapted to its function.		

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