

NAME..... INDEX NO.....

SCHOOL..... CANDIDATE'S SIGNATURE.....

DATE.....

231/2
BIOLOGY PAPER 2
(THEORY)
TIME: 2 HOURS

**TOP NOTCH EXAM MERIT TWO (PRE-MOCK) 2016
KENYA CERTIFICATE OF SECONDARY EDUCATION.**

Instructions to candidates

Write your Name, Index Number and School in the spaces provided above.

This paper consist of Section A and B.

Answer all the questions in Section A in this spaces provided.

In Section B answer Question 6 (Compulsory) and either questions 7 or 8 in the spaces provided after question 8.

For examiner's use only

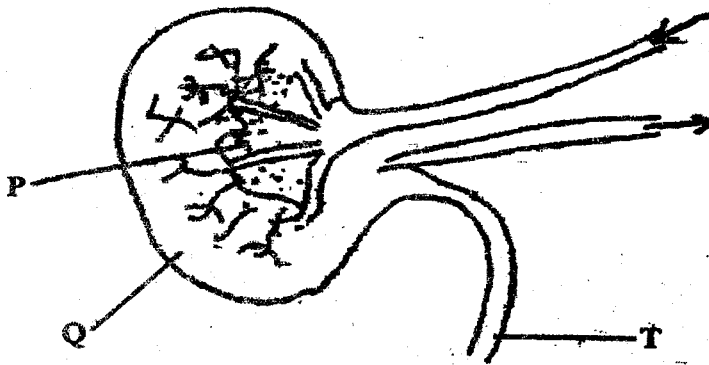
Section	Question	Maximum Score	Candidates score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
Total		80	

*This paper consists of 10 printed pages.
Candidates should check the question paper to ascertain that all the pages are printed
as indicated and that no questions are missing*

SECTION A: (40 MARKS)

Answer all the questions in this section in the spaces provided

1. Study the diagram below of a mammalian organ.



(a) Name the parts labelled P and Q.

P..... (1 mk)

Q..... (1 mk)

(b) State the function of the part labelled T. (1 mk)

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.....

(c) Give a reason why the loop of Henle in desert animals is long. (3 mks)

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(d) Name two hormones that act on the following parts of the kidney.

(i) Loop of henle..... (1 mk)

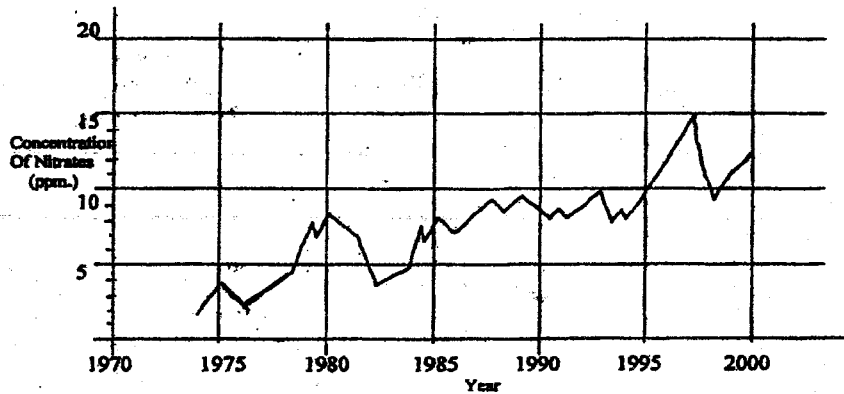
(ii) Distal convoluted tubule..... (1 mk)

2. (a) State two adaptations of halophytes to their habitat. (2 mks)

- (i) _____

- (ii) _____

(b) The graph below shows changes in nitrate concentration in River Yala in Western Kenya, over the last thirty years.



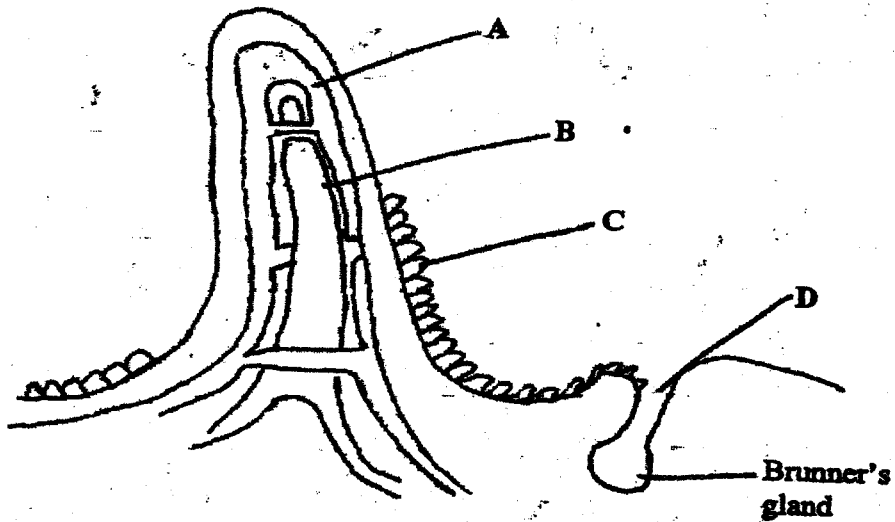
- (i) What is the difference between the highest and lowest nitrate concentrations? (1 mark)

 - (ii) Explain any two ways an increase in nitrate concentration in the river would lead to death of the fish. (2 mks)

 - (iii) Suggest one possible source of nitrates that lead to pollution of the river. (1 mk)

- (c) Name two waterborne diseases that are caused by organisms other than bacteria. (2 mks)

3. The diagram below shows part of a transverse section through the ileum viewed under low power magnification of a light microscope.



(i) Identify the structure represented by the diagram.

_____ (1 mk)

(ii) Name the parts labelled A and C.

(2 mks)

A _____

C _____

(iii) What are the functions of the structures labelled B and D?

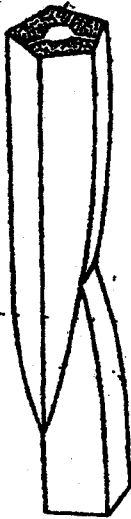
(2 mks)

Function of B _____

Function of D _____

(iv) State three features of structure C that enables it to carry out its function of absorption. (3 mks)

4. Study the diagram of a plant tissue below and answer the questions below it.



(a) Identify the tissue _____ (1 mk)

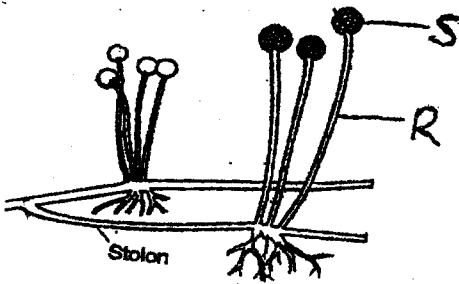
(b) Give a reason for your answer. _____ (1 mk)

(c) How is the tissue adapted to its function? _____ (2 mks)

(d) Name two other plant tissues that play the same role as tissue shown in the diagram. (2 mks)

(e) Name two skeletal tissues in mammals. (2 mks)

5. Study the diagram below of an organism and answer the questions below it.



(a) (i) Name the part labelled R on the diagram. (1 mk)

(ii) State the function of part S. (1 mk)

(b) (i) Identify the kingdom to which it belongs. (1 mk)

(ii) Give a reason for your answer in a(i) above. (1 mk)

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- (c) (i) State the asexual mode of reproduction of the organism shown in the diagram. (1 mk)
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- (ii) Identify two other asexual modes of reproduction in among lower organisms. (2 mks)
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- (d) Name the structure in which male gametes are produced in division bryophyta. (1 mk)
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SECTION B: (40 MARKS)

Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8.

6. Lactic acid concentration in the blood was measured in an athlete who took a physical exercise for nine minutes and the results were tabulated as shown below.

Time in minutes	0	10	15	20	25	30	35	40	45	50	55
Lactic acid conc. in mg/100cm ³ blood.	20	74	95	88	79	70	65	59	54	47	41

From the data given draw a graph showing lactic acid concentration in mg/100cm blood against time. (6 mks)

(b) By how much did the lactic acid increase during the period of exercise? (1 mk)

(c) What was the concentration of lactic acid 57 minutes after commencing the exercise? (1 mk)

(d) Account for the shape of the curve between:
(i) 0- 15 minutes. (3 mks)

(ii) 15 – 55 minutes. (3 mks)

(e) What is the importance of the process by which lactic acid is produced to an athlete? (1 mk)

(f) Name two hormones that were likely to be produced in athlete's body. (2 mks)

(g) State three factors that affect the rate of cellular respiration. (3 mks)
