

NAME INDEX NO
 SCHOOL SIGNATURE
 DATE

231/2
 BIOLOGY
 PAPER 2
 (THEORY)
 MARCH/APRIL 2015
 2 HOURS

CROSS COUNTRY EXAMS 2015

Kenya Certificate of Secondary Education (K.C.S.E)

231/2
 BIOLOGY
 PAPER 2
 (THEORY)
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INSTRUCTIONS TO CANDIDATES

- Write your name and Index Number in the spaces provided above.
- This paper consists of **two** sections. Section **A** and section **B**.
- Answer **ALL** questions in section **A** in the spaces provided. In section **B** answer question **6** (compulsory) and either question **7** or **8** in the spaces provided after question 8

For Examiners 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 score		80	

SECTION A – (40 MARKS)

Answer ALL questions in the question

1. (a) Name the gaseous exchange structure in the following organisms.

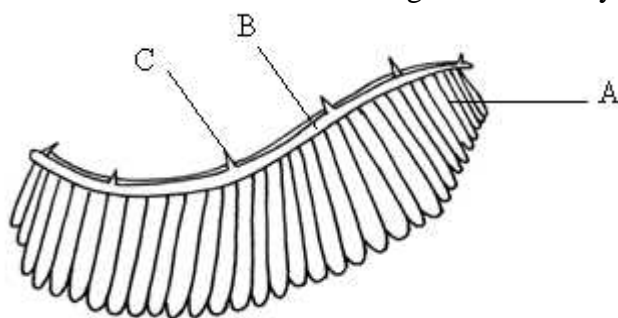
(i) Amoeba (1 mark)

.....

(ii) Grasshopper (1 mark)

.....

(b) The diagram below illustrates the structure of a gill from a bony fish.



(i) Name the parts labelled A, B, C (3 marks)

A

B

C

(ii) State the function of the part labelled C (1 mark)

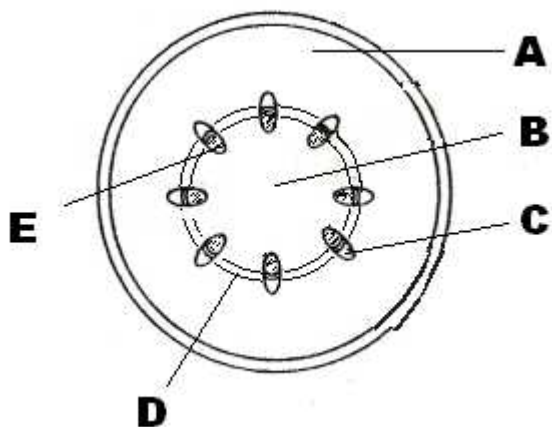
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(iii) How is part A adapted to carry its functions (2 marks)

.....

.....

2. The diagram below represents a transverse section of a young stem.



(a) Name the parts labelled A and B (2 marks)

A

B.

.....

(b) State the functions of the plants labelled C, D and E

C

.....

D

.....

E

.....

(c) List three differences between the section shown above and one that would be obtained from the root of the same plant. (3marks)

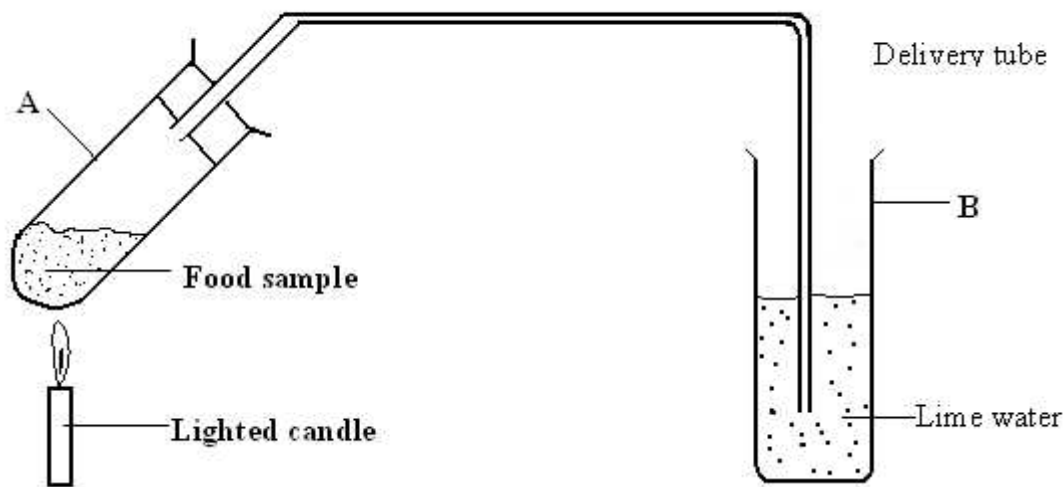
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3. (a) The diagram below shows an experimental set – up by form two students.



(i) State the aim of the experiment. (1mark)

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(ii) State the expected results at the end of the experiment. (2 marks)

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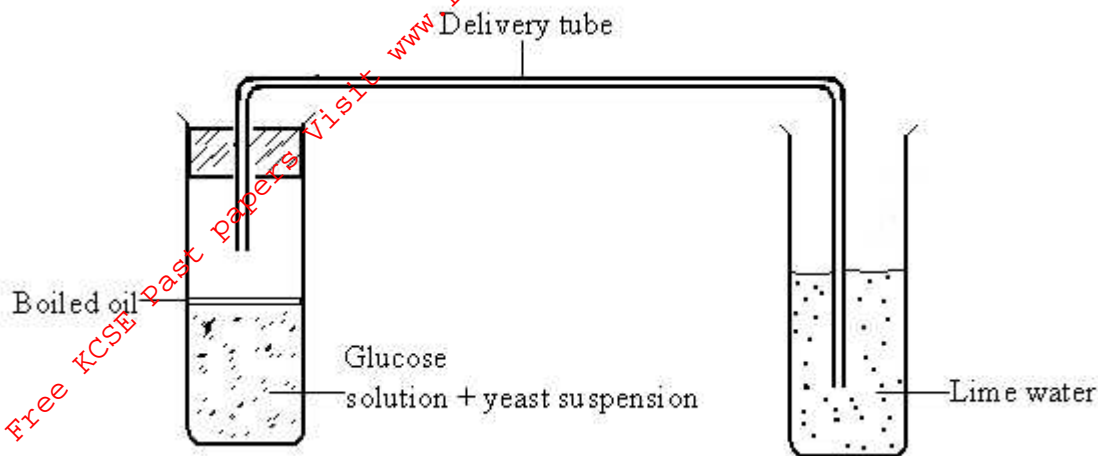
(iii) What conclusion can you make from this experiment? (1 mark)

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(b) Examine the diagram which shows a set used to demonstrate a certain process.



(i) State the aim of the experiment. (1 mark)

.....

(ii) Why was it necessary to boil the glucose solution before adding the yeast suspension? (1 mark)

.....

(iii) Why was it necessary to cool the glucose before adding the yeast suspension? (1 mark)

.....

(iv) Why was the oil layer added? (1 mark)

.....

4. (a) In each case, state one problem faced by fresh water fish and marine fish in their habitats.

(i) Marine water fish (1 mark)

.....

(ii) Fresh water (1 mark)

.....

(b) State two ways through which each of the fish overcome the problems identified in (a) above.

(i) Fresh water fish (2 marks)

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(ii) Marine water fish (2marks)

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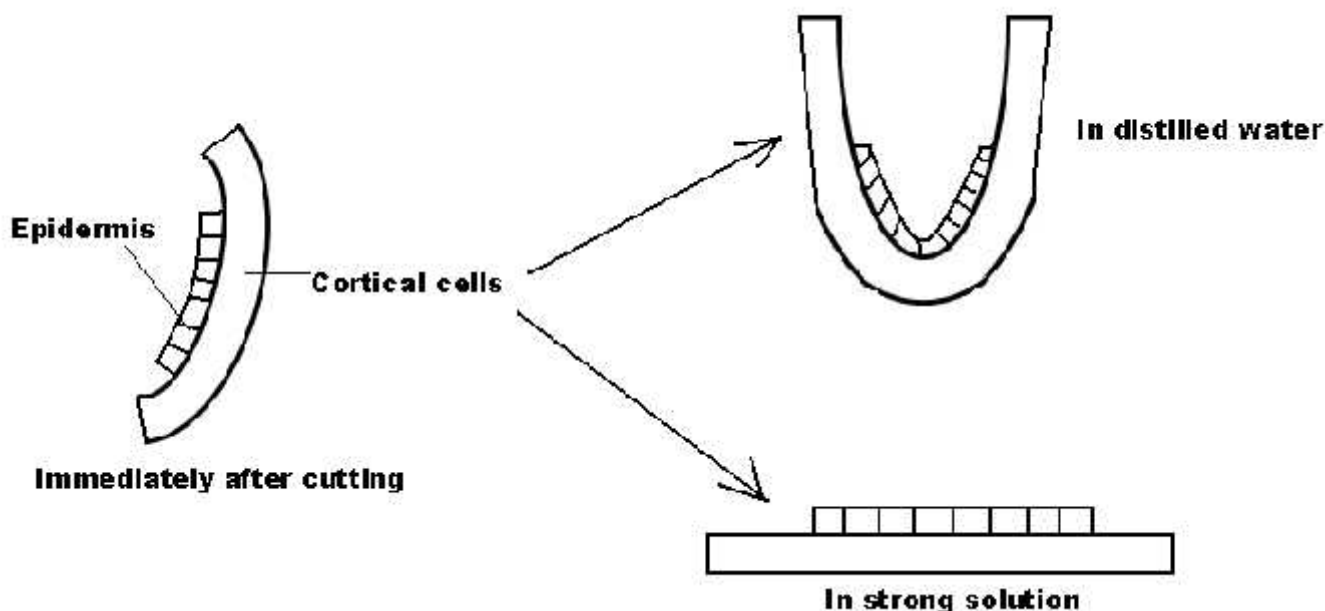
(c) Explain why a person discharges urine more often when the environment temperatures are low than when they are high. (2 marks)

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5. The diagram below shows the treatment given to strips of barbadoes stem which were cut lengthwise from the mainstem.



(a) Account for the results obtained when the strips were put in:-

(i) Distilled water (3 marks)

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.....

(ii) Strong salt solution

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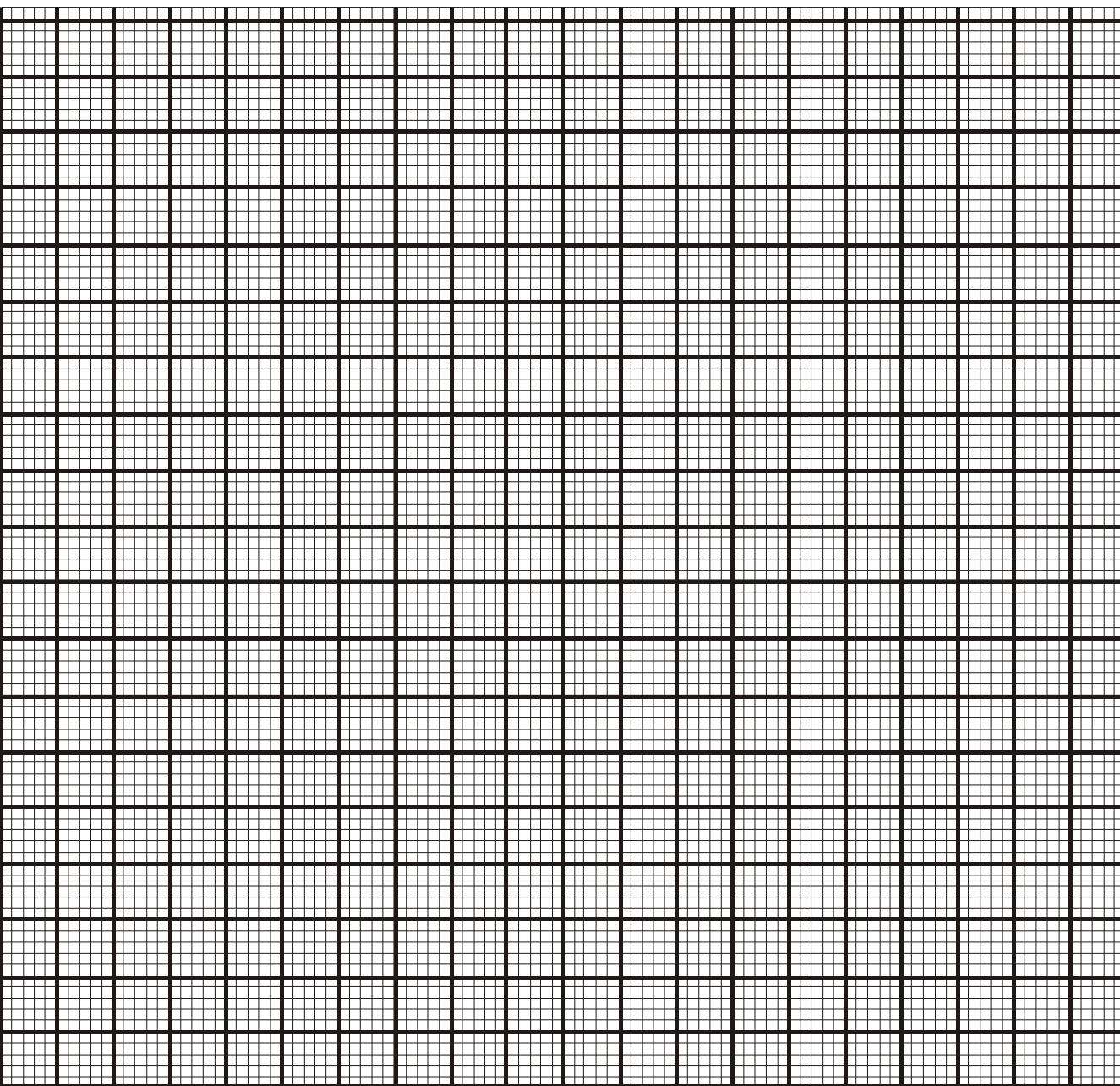
(b) Why did the strips curl slightly outwards immediately after being cut. (2 marks)

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6. The following data represent the development in dry mass of germinating seedlings within 18 weeks.

Time (wks)	0	1	2	4	6	10	13	15	16	18
Dry mass (gm)	1	2	3	10	18	32	44	45	44	38

(a) Plot a graph of dry mass against time. (6 marks)



(b) With reference to the graph, explain the changes in dry mass between.

(i) Week 0 to 2 (2 mark)

(ii) Week 5 to 13 (2mark)

(iii) Week 16 to 18 (2 mark)

(c) (i) What is the significance of time zero. (1mark)

(ii) What difference would be expected from the above results if the experiment started with the seeds. Give a reason.

(d) (i) Describe how you carry out the experiment to obtain dry mass in the respective weeks. (3 marks)

(ii) State one advantage of using dry mass and one disadvantage of using fresh weight in estimating growth.

Advantage (1 mark)

Disadvantage (1 mark)

7. Blood has two broad functions, namely protective and transport.

(a) Explain how blood is involved in transport, stating the constituents of blood involved. (4 marks)

(b) Describe how blood protects the body (4 marks)

8. Describe how seeds and fruits are adapted to different modes of dispersal. (20 marks)

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