

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

231/2
BIOLOGY
PAPER 2
(THEORY)
JULY/AUGUST, 2014
TIME: 2 HOURS

CANDIDATE'S SIGN.....

DATE.....

CENTRAL KENYA NATIONAL SCHOOLS JOINT EXAM – 2014

Kenya Certificate of Secondary Education
BIOLOGY
PAPER 2
(THEORY)
TIME: 2 HOURS

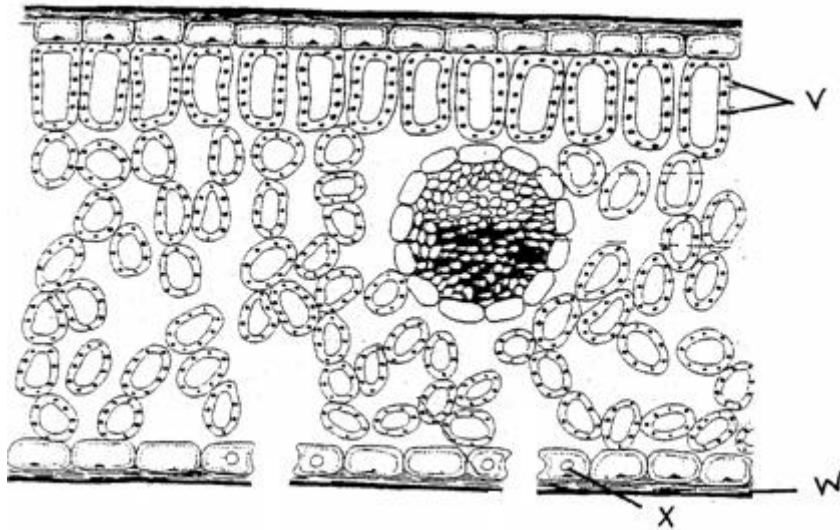
INSTRUCTIONS TO CANDIDATES:

1. Write your **Name**, **Index Number** and **School** in the spaces provided above.
2. **Sign** and write the **date** of examination in the spaces provided above.
3. Answer **all** the questions in the spaces provided.
4. Answers must be written in the spaces provided in the question paper.
5. Additional pages **must not** be inserted.

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 Score		80	

1. The diagram below represents a section of a leaf.



(a) Name the parts labelled **V** and **W**. (2mks)

V _____

W _____

(b) State **two** adaptations of part labelled **X** to its function. (2mks)

(c) (i) State **three** end products of photosynthesis. (3mks)

(ii) Name the structure where the light stage of photosynthesis occurs. (1mk)

2. Haemophilia is a sex linked characteristic caused by a recessive gene carried on the X chromosome. A carrier woman marries a normal man. Use letter H to represent the dominant gene.

(a) Work out the phenotypes of F₁ generation. (5mks)

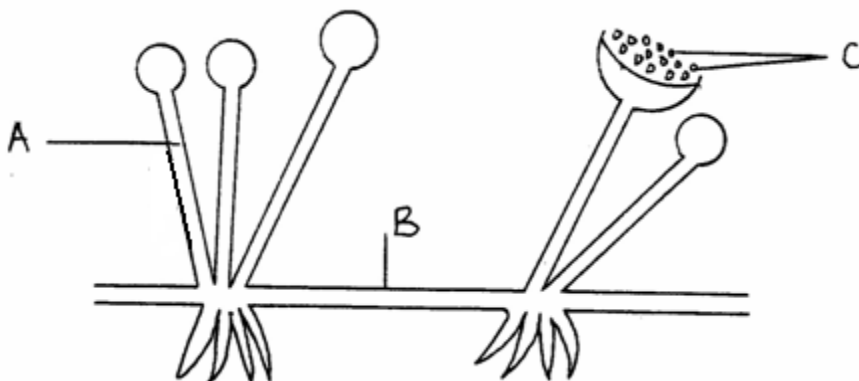
(b) What is the probability of the couple getting a haemophilic son? (1mk)

(c) Define the following terms as used in genetics.

(i) Allele. (1mk)

(ii) Genetic engineering. (1mk)

3. The diagram below represents bread mould (Rhizopus).



(a) Identify the parts labelled **A** and **B**. (2mks)

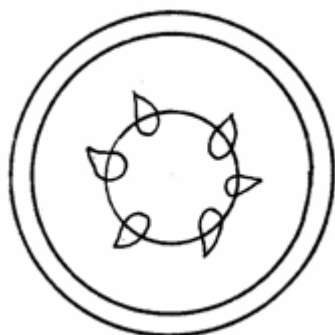
A _____

B _____

(b) State the function of parts labelled **C**. (1mk)

(c) List **two** differences between class chlopoda and diplopoda. (2mks)

(d) The diagram below represents a section obtained from a plant.



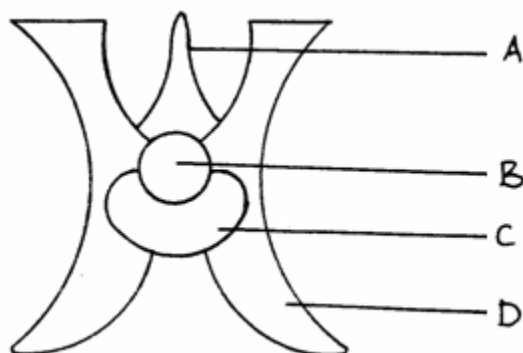
Classify the plant from which the section was obtained under the following: (2mks)

(i) Division _____

(ii) Class _____

(e) Give **two** reasons for your answer in d(ii) above. (2mks)

4. The figure below shows the anterior view of a lumbar vertebra.



(a) Name part labelled A - C. (3mks)

A _____

B _____

C _____

(b) What is the function of part **D**? (1mk)

(c) Name the structure that is found between two vertebrae. (1mk)

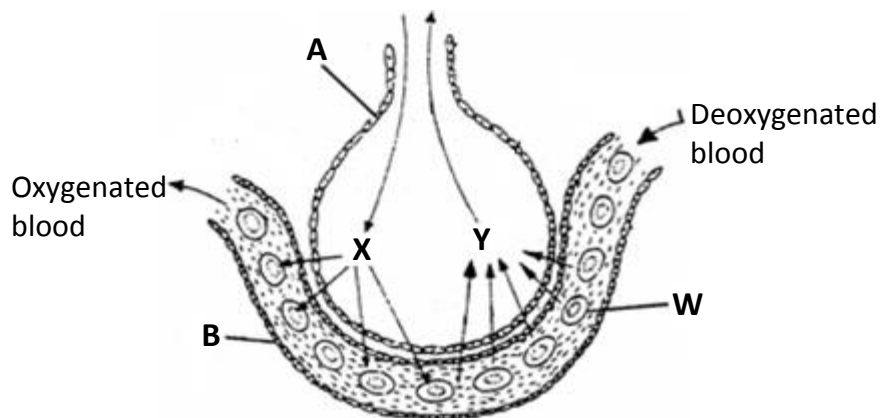
Biology Paper 2

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(d) State **two** important functions of the structure named in (c) above. (2mks)

(e) Name the support tissue in herbaceous plant. (1mk)

5. The diagram below illustrates the structure of the alveolus.



(a) Name the membranes labelled **A** and **B**. (2mks)

A _____

B _____

(b) Name the gases labelled **X** and **Y**. (2mks)

X _____

Y _____

(c) Name the cell labelled **W**. (1mk)

W _____

(d) State **three** adaptations of the above structure to its function. (3mks)

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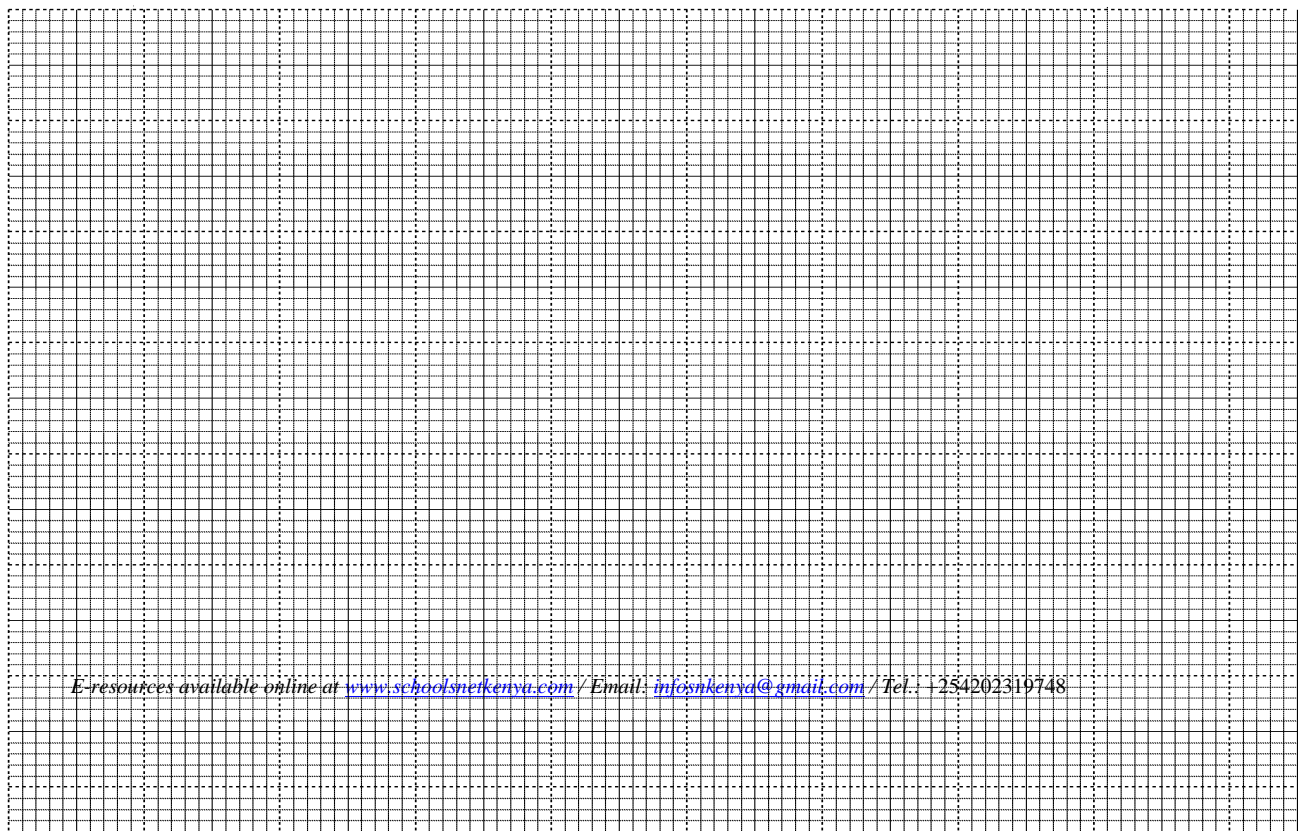
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SECTION B:

6. Some students used a model to demonstrate the effect of sweating on human body temperature. Two boiling tubes A and B were filled with hot water. The temperature of water in tubes was taken at the start of the experiment and then at 5 minutes interval. The surface of tube A was continuously wiped with a piece of cotton wool soaked in methylated spirit. The results obtained are shown in the table below.

Time (minutes)	Temperature °C in table	
	A	B
0	80	80
5	54	67
10	40	59
15	29	52
20	21	47
25	18	46

(a) On the same axes plot graphs of temperature of water in the tubes against time. (6mks)



(b) At what rate was water cooling in tube A. (1mk)

(c) Why was tube B included in the set up. (1mk)

(d) Account for the rate of cooling in tube A. (3mks)

(e) State **two** processes of heat loss in tube B. (2mks)

(f) What would be the expected results in tube A if it was insulated? (1mk)

ANSWERS:

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