

IKUTHA SUB-COUNTY KCSE REVISION MOCK EXAMS 2015

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

SCHOOLS NET KENYA

Osiligi House, Opposite KCB, Ground Floor
Off Magadi Road, Ongata Rongai | Tel: 0711 88 22 27
E-mail: infosnkenya@gmail.com | Website: www.schoolsnetkenya.com

NAME _____

INDEX NO. _____

SCHOOL _____

SIGNATURE _____

DATE _____

231/2

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IKUTHA SUB-COUNTY FORM FOUR JOINT EXAMINATION, 2015**Kenya Certificate of Secondary Education (K.C.S.E)**

231/2

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INSTRUCTIONS TO CANDIDATES

- Write your name, index number and school in the spaces provided above.
- Sign and write date of examination in the spaces provided above.
- Answer **ALL** the questions in section A by filling in the spaces provided.
- In section B, answer question 6 (**compulsory question**) and any other **one** question from the remaining two questions. (i.e. 7 or 8)
- Candidates may be penalized for false information and even wrong spellings of technical terms.
- This paper consists of **10** printed pages.
- Candidates should check to ensure that all pages are printed as indicated and no questions are missing

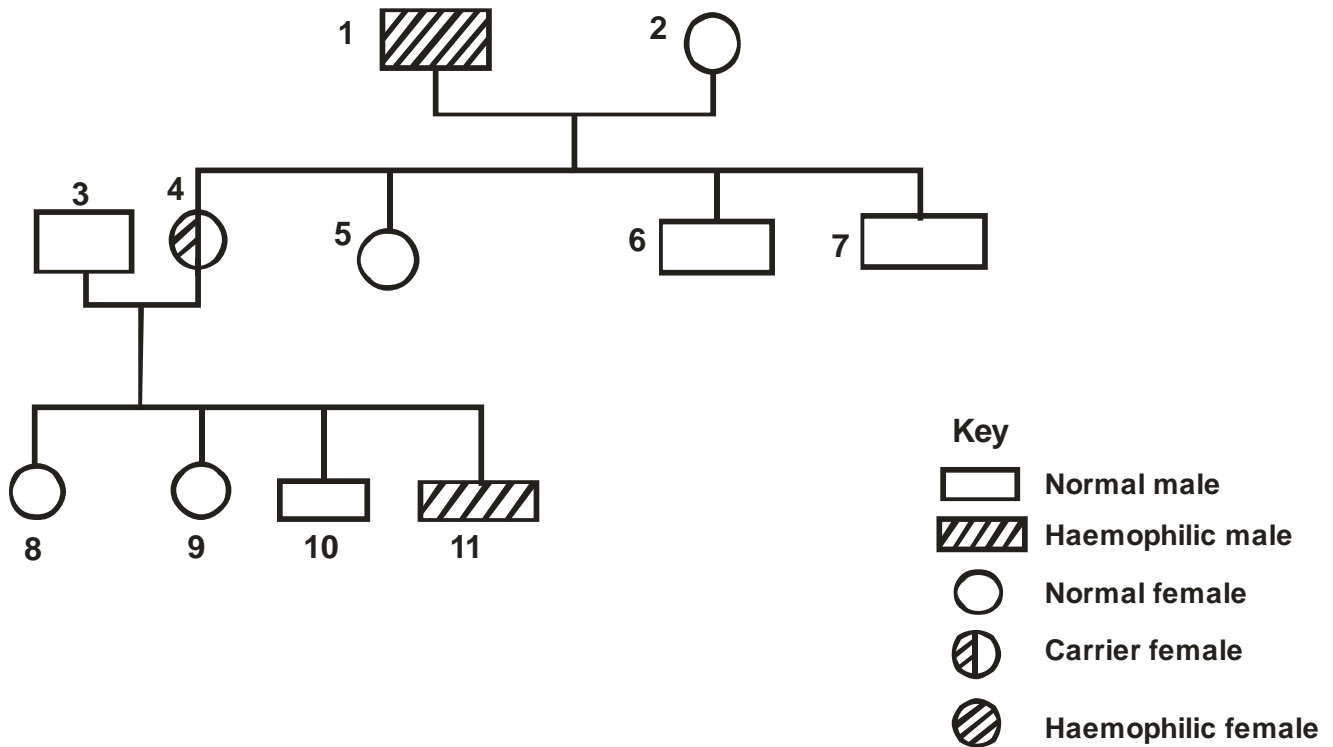
FOR EXAMINER'S USE ONLY

Section	Question	Maximum score	Candidate's 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 the questions in the space provided

1. The pedigree chart below illustrates the inheritance of haemophilia in a given family.



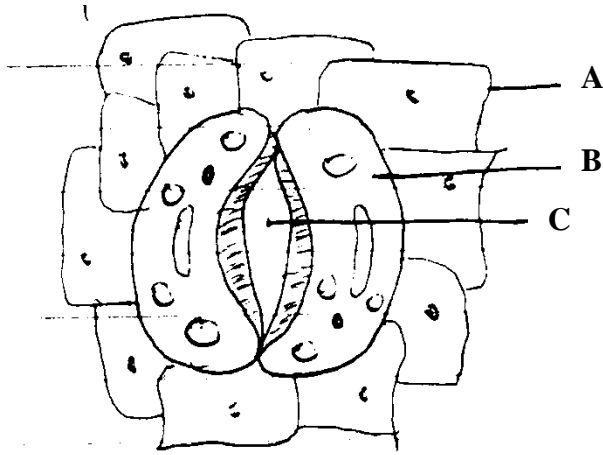
- a) Suggest the possible genotype of: (2 marks)
- i) Individual 1.
-
- ii) Individual 4.
-
- b) Using a punnet square, work out the possible phenotypes of offspring's, if individual 4 married a haemophilic male. (4 marks)

- c) Explain why;
- i) There are no carrier males. (1 mark)
-
-

Some females are healthy although they carry the defective gene.

(1 mark)

2. Study the diagram below and answer the questions that follow.



a) Name the tissue where the cells drawn above are found. (1 mark)

b) Identify cells A and B. (2 marks)

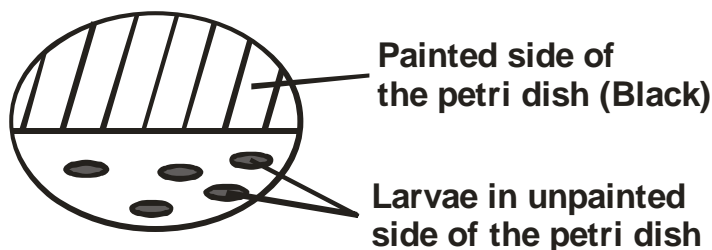
A

B

c) Give **two** structural differences between cell A and cell B. (2 marks)

d) Describe how structure C opens as explained by the photosynthetic theory. (3 marks)

3. During a study, 48 larvae were put in unpainted side of the petri dish as shown below.



The petri dish was left in bright sunshine, the number of larvae on unpainted side was counted every minute for five minutes, the results obtained were as shown below.

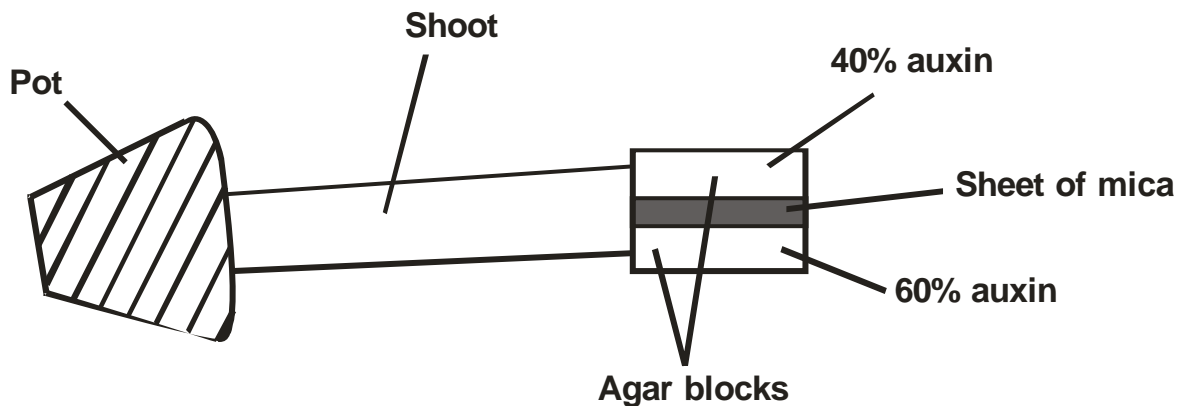
Time (min)	Number of larvae	
	In painted side	In unpainted side
0	0	48
1	38	10
2	41	7
3	45	3
4	47	1
5	48	0

- a) i) What conclusion can you draw from these results about the behaviour of the larvae? (1 mark)

- ii) Name the response exhibited by the larvae. (1 mark)

- ii) What is the survival value of this behaviour to the larvae? (2 marks)

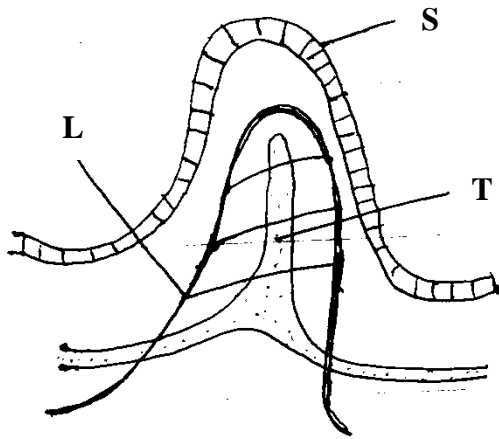
- b) A potted plant was placed horizontally with agar blocks as shown.



- i) Predict the growth curvature of the shoot. (1 mark)

- ii) Account for your answer in (i) above. (3 marks)

4. The diagram below represents structure found in the walls of ileum.



a) Identify the structure shown in the diagram. (1 mark)

b) Name parts labelled S, T and L. (3 marks)

S _____

T _____

L _____

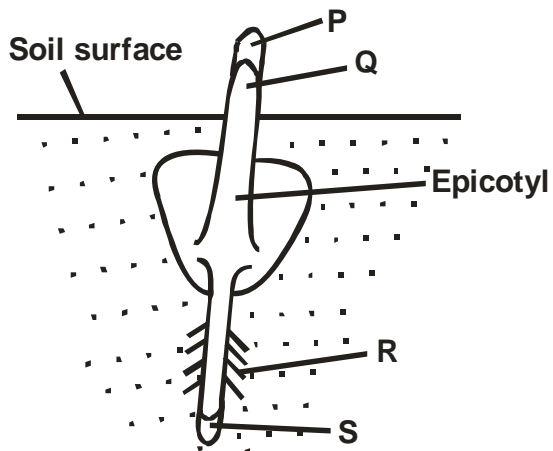
c) Name products of digestion which are absorbed into; (2 marks)

L _____

T _____

d) State how the above structure is adapted to its function. (2 marks)

5. Diagram below represents a germinating seedling.



a) What is germination? (1 mark)

b) Name the part labelled P, Q and R.

(3 marks)

P _____

Q _____

R _____

c) Identify the type of germination shown in the diagram.

(1 mark)

d) What is the role of the following in germination of the above seedling?

i) Oxygen

(1 mark)

ii) Enzymes

(1 mark)

iii) Water

(1 mark)

SECTION B (40 MARKS)

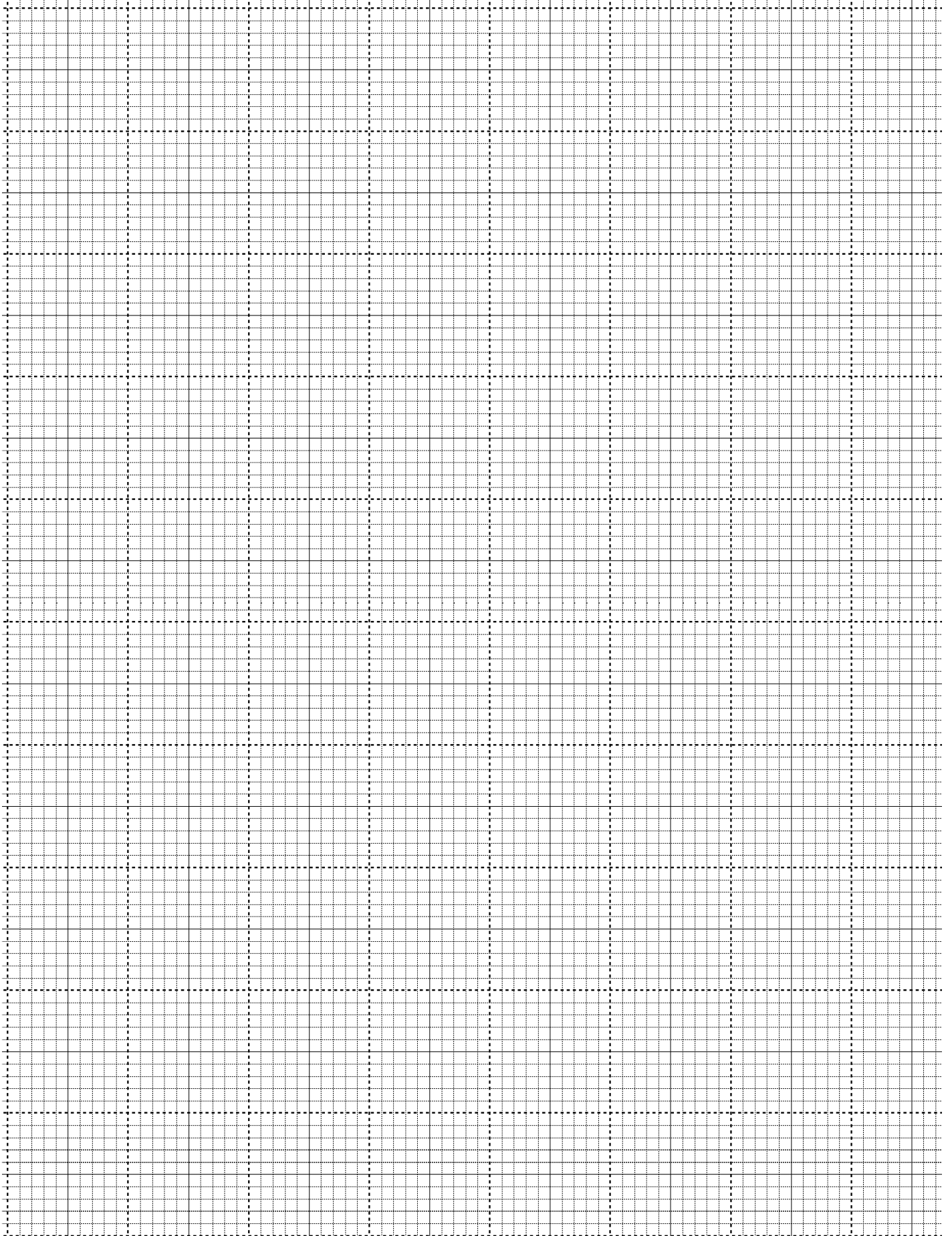
Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8

6. The pressure in the flow of blood in a mammal was determined at two different vessels; A and B. The data was taken within a period of 1 minute and was presented as follows.

Time in seconds	Blood pressure in	
	Vessel A	Vessel B
0	160	320
10	165	360
20	170	320
30	180	400
40	170	360
50	160	320
60	160	360

a) Plot the graph of blood pressure in both vessels against time on the same axis.

(7 marks)



b) Describe the trend of each curve.

(2 marks)

c) I) From the graph, suggest the possible identity for:

i) Blood vessel A.

(1 mark)

ii) Blood vessel B.

(1 mark)

II) Give reasons for your answer in (c) i) and ii) above.

(2 marks)

d) Explain a factor that would result to an increase in blood pressure in both the blood vessels above.

(2 marks)

e) State **two** structural differences between the two vessels mentioned in (c) above.

(2 marks)

f) i) Name **two** diseases of circulatory system in humans.

(2 marks)

ii) Other than transport of substances give one other function of blood.

(1 mark)

7. Give an account of changes that occur in a flower from pollination to the formation of seeds and fruits.

(20 marks)

8. a) Describe the mechanism of hearing.

(10 marks)

b) Describe the role of the following hormones in homeostasis.

i) Anti-diuretic hormone.

(6 marks)

ii) Insulin and glucagon

(4 marks)

