231/2 Biology

NAME:	INDEX NO:
SCHOOL:	SIGNATURE:
	DATE:

231/2 BIOLOGY Paper 2 JULY/AUGUST 2015 2 Hours

NAROK SOUTH SECONDARY SCHOOLS JOINT EXAMINATION Kenya Certificate of Secondary Education (K.C.S.E) BIOLOGY PAPER 2

INSTRUCTIONS TO CANDIDATES:

- 1. Write your name and index number in the spaces provided above.
- 2. Answer all questions in the spaces provided section A.
- 3. In section **B**, answer question **B** (Compulsory) and either question **7** or **8** in the space provided after question **8**.

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
	6	20	
В	7	20	
	8	80	
	TOTAL	80	

This paper consists of 8 printed pages
Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.

SECTION A: (40mks)

Answer all question in the spaces provided.

The diagram below represents an experimental set-up to investigate an aspect of photosynthesis.



The set up was placed in darkness for 24 hrs and then exposed to light for 5 (a) What was the aim of the experiment? (b) Leaves A and B were tested for starch. (i) What would be the expected results? (ii) **Give** reasons for your answer in (b) (i) above. (c) What was the role of leaf B in the experiment? (d) Why was the set – up placed in darkness for 24 hours? (e) Name the organelle in a plant where photosynthesis takes place The diagram below shows a transverse section of the spinal cord. a) Name the parts labeled K and N. (2mrks) K

nrs.	
(1mark)	
(2 marks)	
(2 marks)	
(2 marks)	
(1mark)	
(1mark)	
(1111a1K)	
(1mark)	

	(e)	How is the skin adapted for temperature regulation?	(6 marks)
7.	a)	Describe the process of double fertilization in flowering plants.	(13 marks)
	b)	Explain the adaptations of Kidney tubules to their function.	(7 marks)
8.	a)	Explain how environmental factors increase the rate of transpiration.	(10 marks)
	b)	Describe how the mammalian ear is adapted to perform its functions.	(10 marks)
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	nsmission occurs through the structures in the diagram (3 marks)
State three differences between simp	ale and conditioned reflex actions. (3 marks)
	Conditioned reflex
Simple reflex i)	i)
ii)	ii)
iii)	iii)
the growing seedling.	Bean seedling Wet cotton Wood
	Black box
a) (i) Draw a diagram of the seedling	
	Black box ng to experiment the expected results after three days. (2 marks)
ii) Explain the appearance of the by Suggest a control experiment	Black box ng to experiment the expected results after three days. (2 marks)

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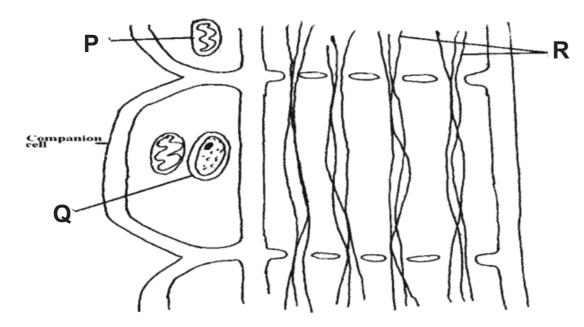
6

3

4. Haemophilia is due to a recessive gene located on the X- chromosome. A phenotypically normal male married a normal female and one of sons was a haemophiliac.
(a) Work out the genotype of the other children

(Use letter H to denote the gene for normal blood clotting). (4 marks)

- (a) Explain why in a human population there will be more cases of Haemophilia in males than females. (2marks)
 (b) Apart from Haemophilia, name one other genetic disorder of human blood caused by gene mutation (1 mark)
 (c) State the importance of vitamin K in blood clotting. (1 mark)
- 5. The diagram below represents part of a phloem tissue.



(a	PQ		
(b	R	(1 mark)	
`		,	
(c	destroyed.	ne phloem tissue is affecte	(1 mark)
•••	(ii) Give a reason for your answer.		
 (d	l) State two structural differences betw		
			· · · · · ·
• •			
SI	ECTION B (40 MARKS)		
	question 6 (compulsory) and either que	estion 7 or 8 in the space	provide after question 8
6.	The table below shows how the quantities	es of sweat and urine vary	with external temperature.
г			
	External temperature °C	Urine cm³/hr	Sweat cm ³ /hr
	0	100	5
-	5	90	6
-	10	80	10
-	15	70	20
-	20	60	30
	25	50	60
Г	30	40	120

(a)	On the same graph, plot the quantities of urine and sweat produced against	st the external
. /	temperature.	(7 marks)
(b)	At what temperature is the amounts of sweat and urine produced equal?	(1 mark)

30

35

200