Name…… …….… Index No:…….

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

Candidate's Signature ……..……
Date: ……

NYAMIRA SUB-COUNTY JOINT EVALUATION EXAM

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

231/2
Biology
Paper 2
2 ½ Hours

INSTRUCTIONS TO CANDIDATES

- *Write your **name** and **index number** in the spaces provided above*
- ***Sign** and write the **date** of examination in the spaces provided.*
- *This paper consists of sections A and B answer all questions in section A*
- *In section B answer question 6compulsory and either question 7or 8 in spaces provided after question 8*
- *Answer **all** the questions in the spaces provided.*

For Examiners Use Only

Section	Question	Maximum score	Candidate's score
A	1	9	
	2	8	
	3	7	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
TOTAL		80	

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

1. The diagram below is a section of the human alimentary canal

(a) Identify part T (1mk)

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(b) State the function of part U (1mk)

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© How is part S modified in ruminant animals in relation to its functions (4mks)

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(d) State the function of goblet cells to the functioning of small intestines (1mk)

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(e) Outline the function of lacteals (1mk)

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2. The diagram below shows the mammalian circulation

(a) Name the blood vessels labeled K,M and N (3mks)

(i) K

……

(ii) M

……

(iii)N

……

(b) Identify the vessels you should expect to find the highest concentration of

(i) Urea (1mk)

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(ii) Oxygen (1mk)

……

(c) During fasting the level of blood glucose in vessel M may be higher than the level in vessel K, explain (3mks)

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3. A cross between a black cock and a white colored hen produced grey colored chicks

(a) Give an explanation for appearance of grey coloured chicks (1mk)

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(b) (i) Work out a cross between F1 offspring. Show your working (4mks)

(ii)Work out the percentage of getting white offspring in F2 (1mk)

(c) Name the genetic disorder affecting red blood cells and colour vision in man

(i) Colour vision (1mk)

……

(ii) Red blood cells (1mk)

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4. Three 4.0cm straight pieces of herbaceous stem were split open 2cm from top one piece was immersed in distilled water. Another in 40% salt solution while the third piece was placed in a dry petri-dish. The set up was left to stand for 30 min. their appearance after 30 minutes was observed

(a) Record the observation in the table below (3mks)

Medium	Appearance
Distilled water	
40% salt solution	
Dry petri-dish	

(b) Account for the appearance of the pieces in:

(i) Distilled water (2mks)

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(ii) 40% salt solution (2mks)

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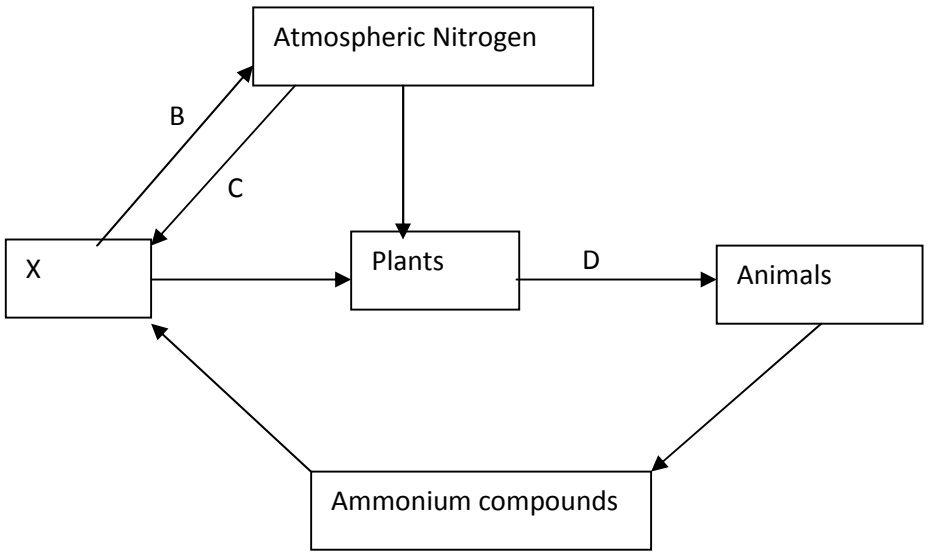
6. The flow chart below represents part of a nitrogen cycle



(a) Name the group of organisms responsible for the process B (1mk)

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(b) Name the processes C and D

(i) C…… (1mk)

(ii) D…….. (1mk)

(c) Describe the formation of compound X from process A (3mks)

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(d) Using a relevant example, explain the meaning of biological control (2mks)

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SECTION B (40 MKS)

Answer question 6 (Compulsory) and either question 7 or 8 in the spaces provide after question 8

6. Form four carried out an experiment to investigate the rate of growth of pollen tube against time. The results were tabulated in a table below as shown below

Time in minutes	Length of pollen tube in millimeters
0	0
20	4
40	9
60	15
80	20
100	21
120	22

(a) Plot a graph of pollen tube length against time on the graph paper provide (6mks)

(b) (i)Determine the growth rate between 80 minute and 34 minute (2mks)

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(ii) What was thelentgh of the pollen tube at 90 minutes (1mk)

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(iii) AT what time was the length of the pollen tube was 18mm (1mk)

……

(c) With reasons, describe the growth pattern of the pollen tube between

(i) 0-80 minutes (2mks)

……

(ii) 80-120 Minutes (2mks)

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(d) Give the importance of the grwoth of pollen tube to the plant (2mks)

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(e) Mention the changes that take place in a flower after fertlization (2mks)

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7. (a)Discuss the economic importance of fungi (10mks)

(b) Describe the photosynthesis theory of the opening of stomata in plants (10mks)

8. Explain how mammalian body maintains constant water balance during osmoregulation (20mks)

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