

NAME:.....

INDEX NO.

SIGNATURE:

231/2

BIOLOGY

Theory

Paper 2

March/April, 2011

Time: 2 Hours

MOKASA JOINT EVALUATION EXAMINATION

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

231/2

Biology

Paper 2

March/April, 2011

Instructions To Candidates

- Write *your name and Index number* in the spaces provided.
- Answer **ALL** the questions in Section A in the spaces provided.
- In section B answer questions 6 (compulsory) and either question 7 or 8 in the spaces provided

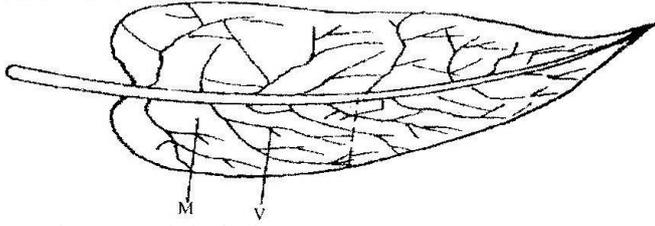
FOR EXAMINER'S USE ONLY

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	

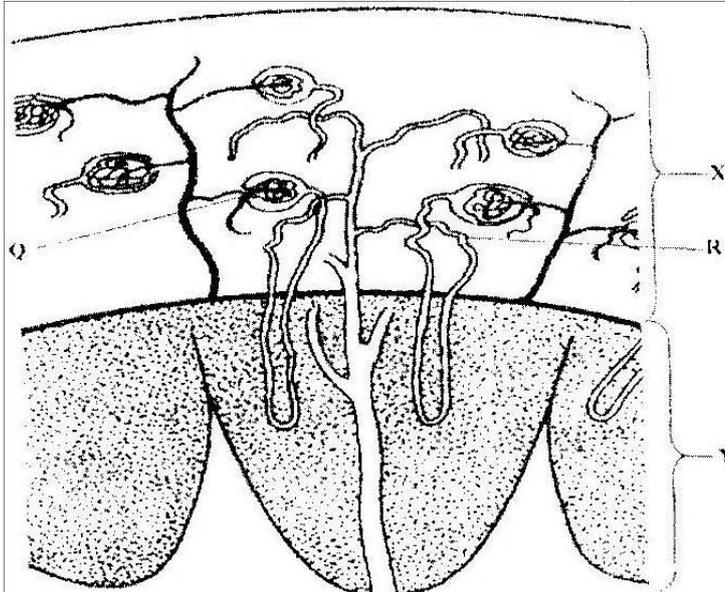
This paper consists of 4 printed pages.

SECTION A

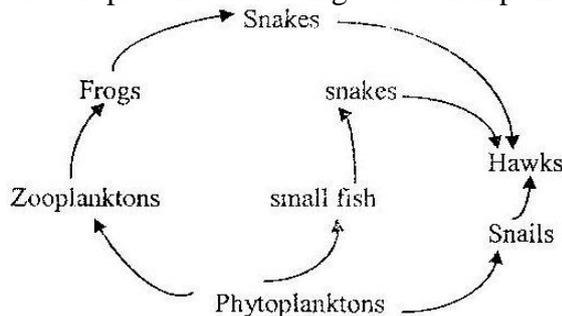
1. Study the diagram below then answer the questions that follow.



- a) Name the parts labeled
M
V
 - b) Explain how the parts you have named in (a) above are adapted to their functions (2 mks)
M
V
 - c) i) Is the structure represented in the figure an organ or a tissue? (1 mk)
ii) Give a reason for your answer in C (i) above (1 mk)
 - d) Other than the adaptations mentioned in (b) above; explain two adaptations of the structure for efficient trapping of sunlight for photosynthesis (2 mks)
2. The illustration below shows a transverse section through a mammalian kidney.



- a) Name the structure labeled
X
Y
 - b) State the process at Q that leads to the formation of glomerular filtrate (1 mk)
 - c) (i) Name the hormone that acts on the part marked R in Osmoregulation (1 mk)
ii) Explain the effect of the hormone you have named in c) (i) above when the osmotic pressure of blood is high (2mks)
 - d) Explain how the body responds to low blood sugar level (2 mks)
3. The diagram below represents a feeding relationship in an ecosystem

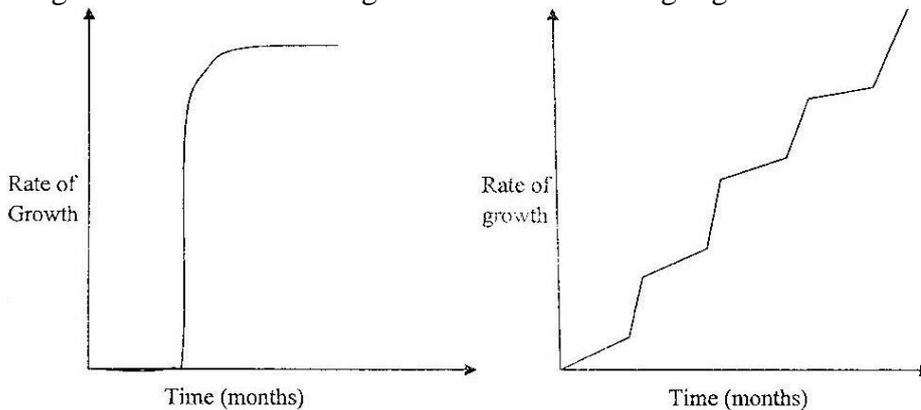


- a) Name the type of ecosystem represented by the above food web (1mk)
- b) Name the organisms in the food web that;
- Are producers (1 mk)
 - Occupies the highest trophic level (1mk)
- c) (i) Write a food chain that ends with the hawk as quaternary consumer (1 mk)
- ii) State two short term effects on the above ecosystem if all the small fish were killed (2mks)
- d) How does oil spills led to death of fish (1 mk)
- e) Name any other cause of water pollution apart from oil spills (1 mk)
4. a) State three uses of genetic engineering in medicine (3 mks)
- b) A man with normal colour vision marries a colourblind woman. She gives birth to a colourblind daughter. Her husband sues for divorce on grounds of adultery. Will his case stand up in courts? show your working .(5 mks)
- Let gene for normal colour vision be C and colourblindness c.
- Parental phenotype : Man with Normal colour Vision \times Colour blind woman
5. Discuss mechanisms through which oxygen and carbon (IV) oxide are transported in the mammalian blood

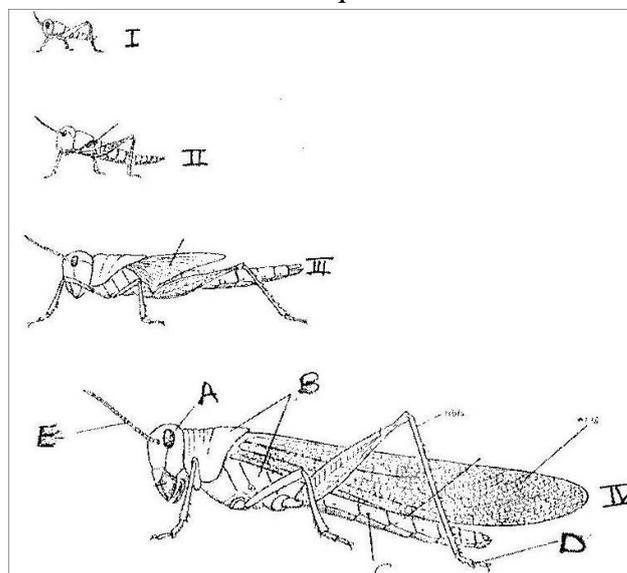
SECTION B

Question 6 is compulsory question; choose one question from question 7 and 8.

6. a) The diagram below illustrates growth curves in living organisms



- What type of curve is illustrated by A and B (2 mks)
 - Name the phylum of organism that shows curve B (1 mk)
- b) Study the diagram below and answer the questions that follow



- i) Name the biological phenomenon illustrated in the diagrams (1 mk)
- ii) Calculate the rate of growth using tibia assuming one stage to the other took twelve days between
I and II (2mks)
III and IV (2 mks)
- iii) Account for the difference in rates of growth between A and II; and III and IV (2 mks)
- c) i) Name the parts labeled A,B AND C(4mks)
ii) State one function of part E (1mk)
- d) How does the nymph of this organism differ from the adult (2marks)
- e) Insects have open circulatory system yet are faster than organisms with closed circulatory system. Explain. (3 mks)

7. Other than geotropism;

- a) Describe the role of auxins in coordination in plants (10 mks)
- b) Explain the effects of under secretion of thyroxine and adrenaline in human (10 mks)
Adrenalin
Thyroxine

8. Describe how the mammalian skin is adapted to its function (20 mks)