

NAME:.....INDEX .....DATE.....  
SCHOOL:.....SIGNATURE.....

231/1  
BIOLOGY  
PAPER 1  
JULY / AUGUST, 2010  
2 HOURS

## BELGUT/AINAMOI JOINT EVALUATION EXAMINATION Kenya Certificate of Secondary Education 2010

231/1  
BIOLOGY  
PAPER 1  
JULY / AUGUST 2010

### 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 above.
- ❖ Answer **all** the question in the spaces provided above.

### For Examiner's Use Only

Question	Maximum scores	Candidate scores
1- 24	80	

### Answer all questions in this question paper in the spaces prided

1. a) What is meant by the term taxonomy? (1mk)

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b) When are two organisms considered to belong to the same species? (2mks)

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2. State three activities of the cell that are controlled by the nucleus (3mks)

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3. Distinguish between haemolysis and plasmolysis. (2mks)

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4. State two adaptations of leaves that maximize efficiency in trapping sunlight for photosynthesis. (2mks)

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5. State two roles of hydrochloric acid in the digestion of food. (2mks)

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6. a) Name the blood vessels that link arterioles with venules (1mk)

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b) How are the blood vessels above suited to carry out their functions (2mks)

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7. Explain how the following adaptations will reduce the rate of respiration. (2mks)

a) Sunken stomata

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b) Leaf folding

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8. a) Name two structures for gaseous exchange in amphibians (2mks)

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b) What is the effect of relaxation of diaphragm muscles during breathing in mammals. (3mks)

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9. The equation below represents a process that occurs in plants.



a) Name the process (1mk)

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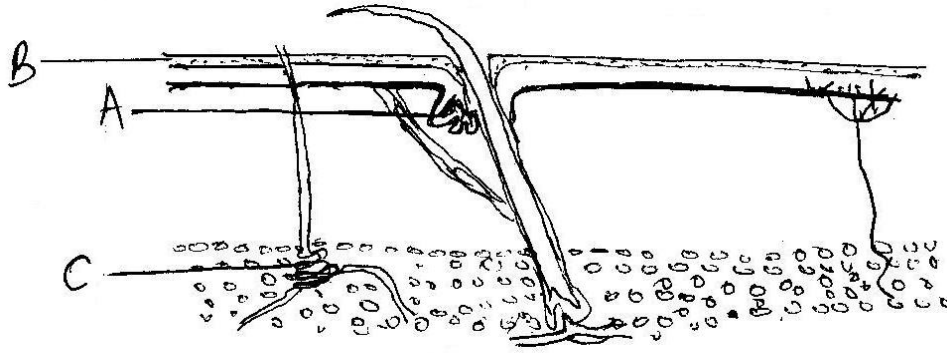
b) Name the product B (1mk)

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c) State the economic importance of this process (2mks)

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.....

10. The diagram below represents a transverse section thro! human skin



a) Name the structure labelled; (2mks)

A.....

B.....

b) State the function of part labelled C (1mk)

C .....

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.....

c) State **two** physiological changes that take place in a human skin in order to facilitate heat loss from the body. (2mks)

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11. a) In what ways are fungal and plant cells similar. (2mks)

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b) List **two** external features that distinguish members of class mammalian from other classes (2mks)

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12. Name the disease caused by each of the following microorganism (2mks)

a) Plasmodium falciparum

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b) Entamoeba histolytica

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13. State how excessive use of agrochemicals affects large water bodies. (2mks)

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14. a) Distinguish between ecological niche and habitat. (2mks)

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b) Explain why the ecosystem is said to be a self- sustaining natural unit.(2mks)

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15. a) Define the following terms in human reproduction. (2mks)

(i) Parturition.....

(ii) Implantation.....

b) Name the hormone involved in the development of a female secondary sexual characteristic. (1mks)

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c) Give **one** function of amniotic fluid during pregnancy (1mk)

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16. a) State **two** factors within the seed that causes seed dormancy. (2mks)

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b) Distinguish between epigeal germination and hypogeal germination. (2mks)

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17. a) Define the following terms. (2mks)

i) Mutation.....  
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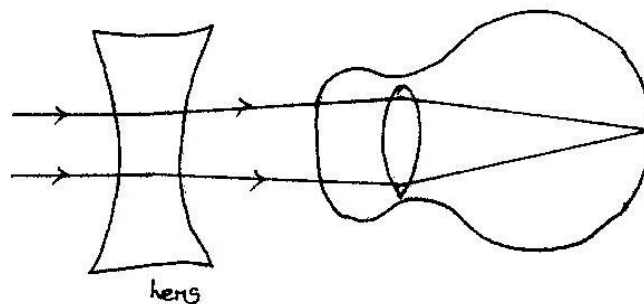
ii) Discontinuous variation

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b) Haemophilia is more common in men than in women . Suggest reasons to account for this. (2mks)

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18. a) State **two** evidences of evolution. (2mks)

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b) Explain the concept adaptive radiation. (2mks)

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19. The diagram below illustrates a certain eye defect



a) State the eye defect in the above diagram. (1mk)

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.....  
b) i) State one cause of the above eye defect. (1mk)

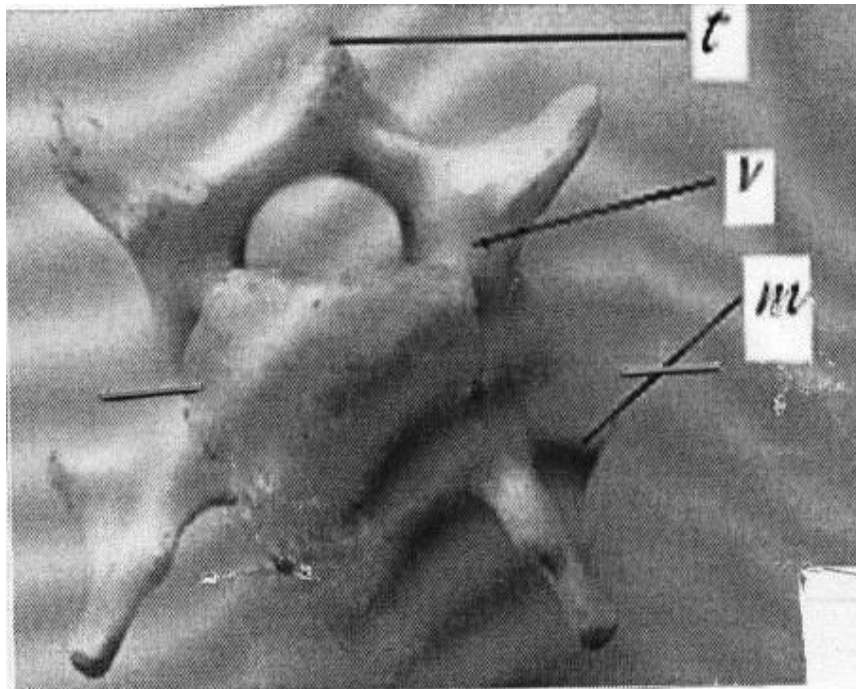
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ii) What role does the lens play in the correction of the above defect? (2mks)

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20. Give **three** structural differences between the skeletal muscles and smooth muscles. (3mks)

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21. The photograph below represent a bone obtained from a mammal.



a) Identify the bone (1mk)

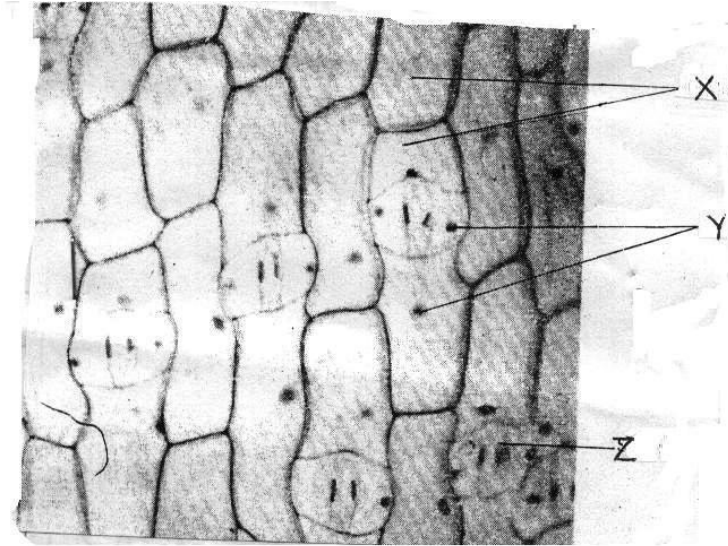
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b) Name the parts labelled; (2mks)

t.....

m.....

22. Below is a photomicrograph of the surface view of the lower epidermis of a monocotyledonous leaf.



a) Name the cells labelled. (2mks)

X.....

Y.....

b) State **two** roles of part labelled Z in plants (2mks)

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 .....

23. State **three** structural adaptations of the proximal convoluted tubules to their functions. (3mks)

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24. a) What is parthenocarpy. (1mk)

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b) Which hormone can be used to induce parthenocarpy in unpollinated flowers (1mk)

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c) What is the significance of slippery seeds in a tomato during dispersal? (1mk)

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d) Why is a maize grain considered as a fruit? (1mk)

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