NAME: ……..…… INDEX NO: ……..……

SCHOOL:……..

231/1
BIOLOGY
PAPER 1
THEORY
JULY / AUGUST 2007
2 HOURS

BUNGOMA DISTRICT MOCK EXAMINATION
Kenya Certificate Of Secondary Education 2007

231 / 1
BIOLOGY
PAPER 1

INSTRUCTIONS TO CANDIDATES

- *Answer **ALL** questions in this paper in the spaces provided.*

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	**TOTAL**

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

1. (a) **State** the role of the DNA in a cell. (1mark)

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(b) **Give two** structural adaptations of the chloroplast to its function. (2marks)

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2. (a) **Define** the term balanced diet. (2marks)

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(b) **State** the importance of roughage in a diet. (1mark)

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3. (a) **State** the composition of an ecosystem. (2marks)

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

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4. (a) **Differentiate** between the apical meristern and the cambium. (2marks)

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(b) **State** the role at the following in germination. (2marks)

(i) Hypocotyl in epigeal germination

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(ii) Coleoptiles in hypogeal germination.

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5. **Give three** structural differences between the skeletal muscles and smooth muscles. (3marks)

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6. (a) **State** the functions of the placenta in a pregnant mammal. (2marks)

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(b) **Give one** function of amniotic fluid during pregnancy. (1mark)

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7. (a) **How** are the wind pollinated flowers adapted to their function? (2marks)

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(b) **State two** advantages of cross – pollination. (2marks)

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8. **Explain** how fossil records can be used as evidence for evolution. (3marks)

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9. **State** how the leaf of the hydrophyte is adapted to its function. (3marks)

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10. **Explain** the role of antidiuretic hormone when there is less water in the human body.

(3marks)

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11. (a) A form two student observed the skull of a carnivorous mammal; **State two** observable features that the student used to classify the skull as that of a carnivore. (2marks)

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(b) **State** the function of the two features named in (a) above. (2marks)

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12. The plant shoot was observed to have curved towards unilateral source of light. **Explain** what happened. (3marks)

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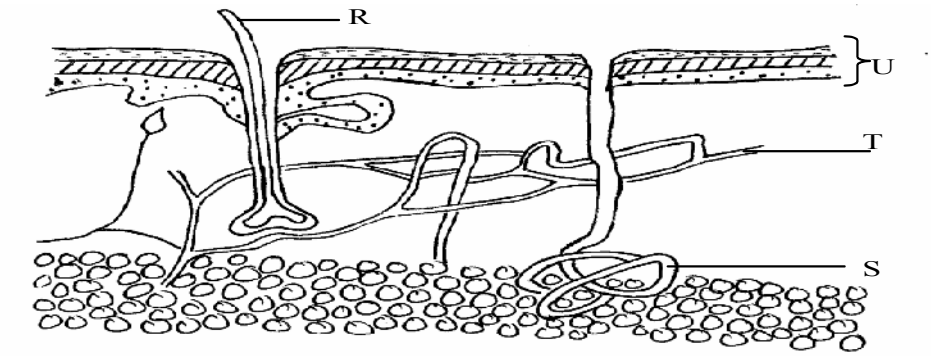
13. The diagram below represents a vertical section through a mammalian skin.



(a) **Name** the structure labeled **U** (1mark)

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(b) **State** the physiological changes that would occur in the following structures when the surrounding temperature was raised towards 40^0C (3marks)

(i) **R :** ……

……

(ii) **T:** ……

……

(iii) **S:** ……

……

14. **State three** distinguishing features for members of phylum chordata. (3marks)

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15. (a) **State the** reasons for the following adaptations of the xylem vessels. (2marks)

(i) Narrow lumen: ……

……

(ii) Lack of cross walls: ……

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(b) **State two** distinguishing features of the phloem sieve tubes. (2marks)

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16. **Study** the table below and till the blank spaces (3marks)

ORGAN	**HORMONE**	**FUNCTION**
Pituitary		(i) Causes ovulation (ii) Stimulate production of progesterone
Ovarian tissue	Oestrogen	
Pituitary	Follicle stimulating Hormone	

17. **State three** ways in which the vessels that link arterioles with venules are suited to carrying out their functions. (3marks)

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18. (a) **How** do the following factors affect the rate of diffusion? (3marks)

(i) Surface area to volume ratio

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(ii) Diffusion gradient

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(iii) Temperature

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(b) **Name** the physiological process that requires energy to occur. (1mark)

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19. (a) **Define** the term habitat (2marks)

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(b) **Explain** how competition is a factor that regulate the animal population in a habitat. (2marks)

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20. **State three** adaptations of the mammalian Nephron to reabsorption of useful substances into the blood stream. (3marks)

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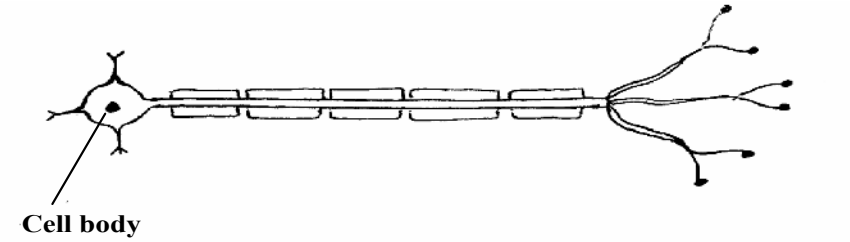
21. The diagrams below repents a nerve cell



(a) **Identify** the nerve cell. (1mark)

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(b) (i) **Give** a reason for your answer in (a) above (1mark)

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(ii) **Show** by use of an arrow the direction of flow of the nerve impulses. (1mark)

22. **State how** excessive use of agrochemicals affects the large water bodies. (2marks)

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23. (a) **State** the functions of each of the following cell organelles (2marks)

(i) Golgi bodies

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(ii) Smooth Endoplasmic

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(b) **Name two** structures that are found in plant cells but absent is animal cells. (2marks)

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24. **Explain** how the Mammalian alveoli are suited to gaseous exchange (3marks)

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25. (a) **Name three** limiting factors that affect the rate of photosynthesis (3marks)

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(b) **Which** of the limiting factor is used in the dark stage of photosynthesis? (1mark)

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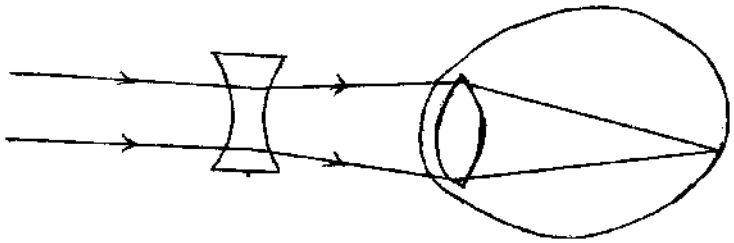
26. The diagram below illustrates a certain **eye defect**.



(a) State the eye defect in the above diagram (1mark)

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(b) (i) **State** the cause of the above eye defect (1mark)

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

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27. (a) Nitrogen in the atmosphere can not be directly utilized by plants. **State two** ways by which this Nitrogen is made available for plant use. (2marks)

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(b) **State** the importance of saprophytic bacteria in the environment. (2marks)

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