Name ..... **Index Number** ..... / .....

Candidate's Signature ..... **Date** .....

231/1
BIOLOGY
PAPER 1 (THEORY)
JULY/ AUGUST 2013
TIME: 2HOURS

KIKUYU DISTRICT INTERSCHOOLS EVALUATION

KENYA CERTIFICATE OF SECONDARY EDUCATION

231/1
BIOLOGY
PAPER 1 (THEORY)
TIME: 2HOURS

Instructions to candidates

1. Write your Name and Index Number in the space provided above.
2. Sign and write the date of the examination in the spaces provided above.
3. Answer ALL the questions in the spaces provided.

For Examiner's use only

Q 1 - 27	Expected Marks 80	Score

1. a) What is meant by the term Entomology. (1 mark)

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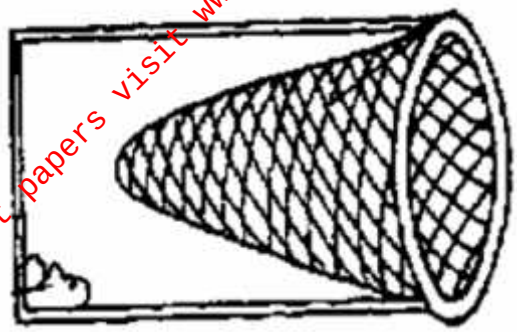
b) The diagram below represents a certain apparatus used by biology students.



(i) Name the apparature above. (1 mark)

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(ii) State the role of the apparatus named in b) (i) above. (1 mark)

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2. a) What do you understand by the term bionomial nomenclature. (1 mark)

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b) State **two** general chacteristics of phylum Chordata. (2 marks)

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3. State **two** functions of the cell wall. (2 marks)

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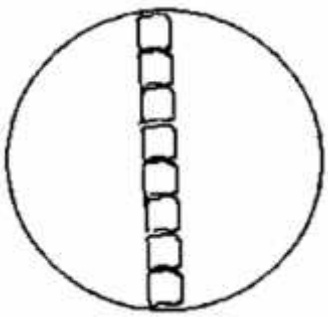
4. During a practical lesson to estimate the size of a cell, using the sketch below which some students observed, calculate the length of one cell in micrometers given that the field of view was 8mm wide. (3 marks)



5. State **three** factors affecting the rate of active transport in living organisms. (3 marks)

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6. State **two** factors that increase the rate of photosynthesis in green plants. (2 marks)

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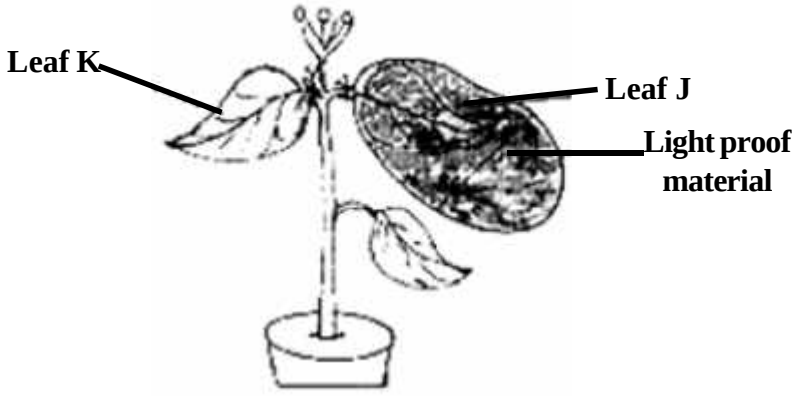
7. The diagram below shows an experimental set-up used to investigate a certain aspect of photosynthesis.



a) State the aim of the experiment. (1 mark)

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b) What was observed when both leaves were tested for starch. (2 marks)

J

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K

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c) Give a reason for your answer for J in (b) above. (1 mark)

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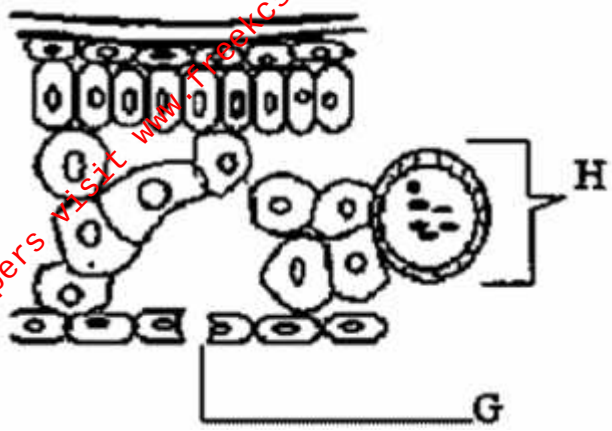
8. The diagram below represents a cross section of a certain plant organ as observed under a light microscope. Use it to answer the questions below.



a) Identify the above organ. (1 mark)

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b) Name the part labelled G. (1 mark)

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c) State the role of part labelled H. (2 marks)

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9. Describe a condition referred to as asthma in human beings. (3 marks)

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10. State **three** distinctive characteristics of Class Mammalia. (3 marks)

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11. During a marathon race, the chemical process represented by the equation below takes place in the participants muscles.

$$C_6H_{12}O_6 \longrightarrow 2CH_3CH(OH)COOH + 150KJ$$

Glucose Substance X

a) What is the name of this process (1 mark)

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b) Name the substance x (1 mark)

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c) What happens to the muscles if x accumulate to critical levels. (1 mark)

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12. a)Distinguish between excretion and egestion. (2 marks)

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b) Name **two** excretory products of a terrestrial animal. (2 marks)

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13. What do you understand by the condition commonly known as Rhesus factor. (3 marks)

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14. Give **two** hormones that help the body in osmoregulation. (2 marks)

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15. a) State **two** ways inwhich plants remove their wastes. (2 marks)

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b) Name **one** use of a papain. (1 mark)

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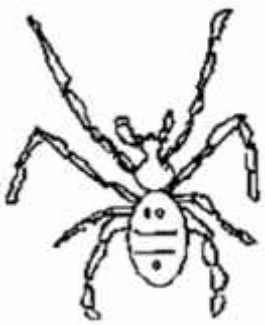
16. The diagram below represents a certain organism collected by a student on his way to school.



a) State the class to which the organism belongs. (1 mark)

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b) Give **three** reasons for your answer in (a) above. (3 marks)

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17. a) What is meant by the following terms as used in ecology:

i) Biomass (1 mark)

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ii) Ecosystem (1 mark)

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b) Give **two** adaptations of *Ascaris Lumbricoides* to their parasitic mode of life. (2 marks)

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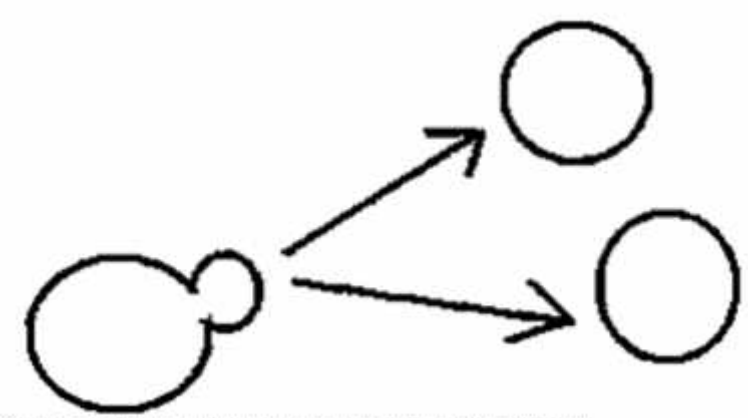
18. The sketch below represent the process of reproduction in a certain organism.



a) (i) Name the type of reproduction represented above. (1 mark)

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(ii) Give an example of an organism that reproduces as in the diagram above. (1 mark)

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b) What is implantation. (1 mark)

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19. Name **two** ways by which seed dormancy can be broken. (2 marks)

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20. Give **two** regions where secondary growth takes place in plants and **one** region where growth take place in animals.

Plants (2 marks)

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Animals (1 mark)

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21. Giving an example, describe discontinous variation. (2 marks)

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22. State how knowledge in genetics has been applied by human. (3 marks)

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23. a) What do you understand by the term organic evolution. (1 mark)

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b) Briefly explain the term convergent evolution. (3 marks)

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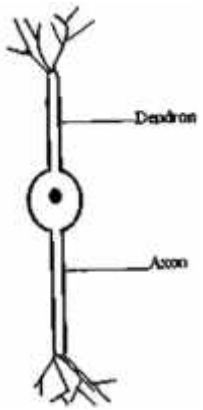
24. The diagram below represents a certain nerve cell. Use it to answer the questions that follow.



a) Identify the nerve cell. (1 mark)

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b) On the diagram, indicate the direction of flow of impulse. (1 mark)

c) Give **one** functional difference between axon and denron. (1 mark)

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25. Name **one** defect of human eye. (2 marks)

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26. State the structural difference between skeletal muscles and smooth muscles. (3 marks)

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27. Name the causative agent of;

a) Malaria (1 mak)

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b) Whooping cough (1 mark)

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