

Name..... Index No:.....

231/1
BIOLOGY
PAPER 1
THEORY
JULY/AUGUST- 2014
TIME: 2 HOURS

Candidate's Signature
Date:

RACHUONYO SOUTH SUB-COUNTY JOINT EVALUATION EXAM
Kenya Certificate of Secondary Education (K.C.S.E.)

231/1
Biology
Paper 1
2 hours

INSTRUCTIONS TO CANDIDATES

- Write your name, Index number and school in the spaces provided above.
- Answer All questions in the spaces provided on the question paper.
- Sign and write the date of examination in the spaces provided above.
- Additional pages must **NOT** be inserted.

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1-29	80	

This paper consists of 7 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

1. What is meant by the term sex linkage. (1mk)

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2. Part of one strand of DNA molecule was found to have the following sequence

G-C-C- G – A – T- T – T – A – C – G – G

What is the sequence

(i) of the complimentary DNA strand? (1mk)

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(ii) On a m-RNA strand copied from this DNA portion? (1mk)

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3. State **three** regions in a plant where the end products of photosynthesis are translocated to? (3mks)

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4. With reference to circulatory system only give **two** reasons why birds and mammals are more active compared to other organisms? (2mks)

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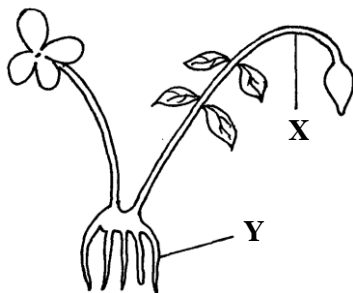
5. (a) What **three** characteristics are used to divide the phylum arthropoda into classes? (3mks)

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(b) The diagram below shows an organisms from a division in Kingdom plantae. Study it and answer the questions that follow.



(i) Identify the division from which the plant was obtained. (1mk)

.....

(ii) Name the parts labelled X and Z (2mks)

X.....

Z.....

6. What is the relationship between a genus and a species? (1mk)

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.....

7. A drawing of 3 cm was made of a giant spider whose actual length was 7cm. calculate the magnification of the drawing? (3mks)

8. Explain why osmosis is described as a special type of diffusion? (1mk)

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9. The following table shows the estimated number of organisms recorded in a dam.

Organisms	Number
Small fish	3500
Microscopic algae	12000
Crocodiles	100
Large fish	950
Mosquito larvae	8900

(a) Construct a possible food chain for the dam? (1mk)

(b) Construct a pyramid of numbers for the given data? (1mk)

(c) Explain the shape of pyramid obtained? (2mks)

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10. (a) Explain why leaves of most plants are thin and broad. (2mks)

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(b) State the function of the following enzymes during digestion in the stomach?

(i) Pepsin (1mk)

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(ii) Renin (1mk)

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11. Explain the following:

(i) Respiratory surface must be moist? (1mk)

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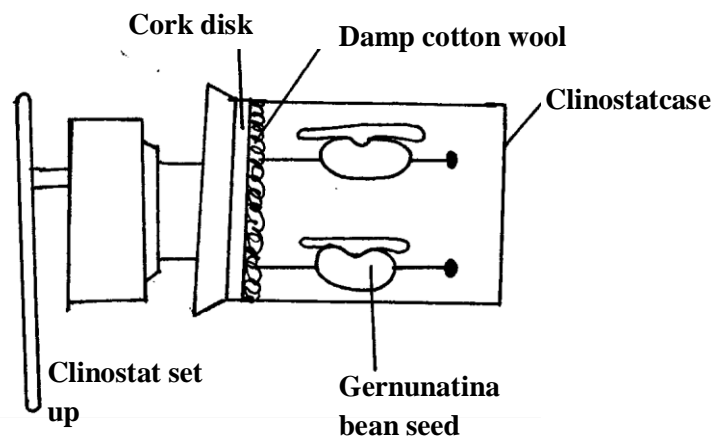
(ii) Respiratory surface must be thin (1mk)

.....

(iii) Palisade cells are cylindrical shaped and arranged with long axis perpendicular to the leaf surface. (1mk)

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12.



Germinating beans seeds were placed in the clinostat as shown in the diagram and left for three days.

(a) What is a clinostat. (1mk)

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(b) The Clinostat was switched on and left to run for the three days. Suggest the direction the seedling will be facing at the end of the three days. (1mk)

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(c) Give a reasons for your answer in (b) above? (1mk)

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13. Explain why the body temperature of a healthy person rises slightly during humid days? (2mks)

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14. Nocturnal animals such as owl are capable of seeing fairly at night. What **two** retinal adaptations have made this possible? (2mks)

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15. State the function of the following organelles:

(i) Granulated Endoplasnic reticulum (1mk)

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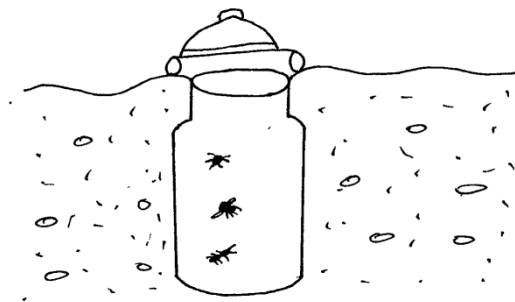
(ii) Nucleolus (1mk)

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16. State **three** gaseous exchange sites in plants? (3mks)

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17. The diagram below shows an apparatus used during collection of specimen or biological study.



(a) Identify the apparatus? (1mk)

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(b) What is the use of the apparatus named above? (1mk)

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18. List **three** limitations of fossil records as an evidence of organic evolution? (3mks)

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19. Distinguish between enzyme co-factors and co-enzymes? (2mks)

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20. Give **two** reasons for the rapid growth during the exponential phase of growth curve? (2mks)

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21. Give **two** reasons why *Carolus Linneaus* preferred the use of latin language in the scientific naming of living organisms. (2mks)

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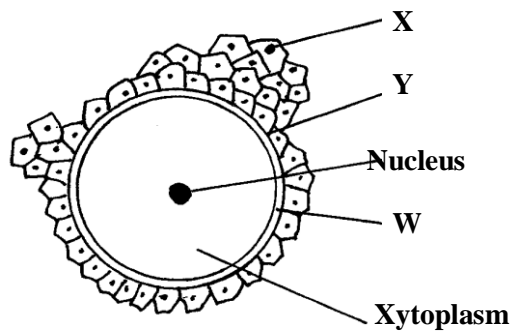
22. State **three** roles played by active transport in living organisms. (3mks)

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23. List **three** factors affecting the rate of respiration? (3mks)

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24. Study the diagram below and answer the questions that follow.



(a) Identify the cell (1mk)

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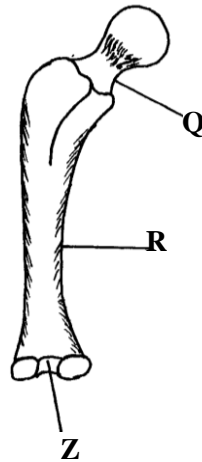
(b) Label the parts **X,Y** and **W** (3mks)

X

Y

W

25. The diagram below shows a bone of the hind limb. Study it and answer the questions that follow.



(a) Name the bone (1mk)

.....

(b) Name the parts labelled Q and A (2mks)

Q.....

A.....

(c) Name the structure that articulates with the part labelled Z and the joint formed? (2mks)

Structure

Joint

.

26. List two functions of inter-vertebral discs between two adjacent vertebrae. (2mks)

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27. Explain why it is becoming more difficult to treat malaria using chloroquine? (4mks)

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28. State **four** ways by which the ileum is adapted for absorption of food materials? (4mks)

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29. Name **two** processes that contribute to variation during gamete formation? (2mks)

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ANSWERS:

Order a copy of answers from www.schoolsnetkenya.com/order-e-copy

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