

NAME.....INDEX NO.....

SCHOOL.....DATE.....

SIGN.....

231/1  
BIOLOGY  
PAPER 1  
(Theory)  
JULY/AUGUST 2014  
TIME: 2 HOURS

**NAKURU DISTRICT SEC. SCHOOLS TRIAL EXAMINATIONS 2014**  
*Kenya Certificate of Secondary Education*

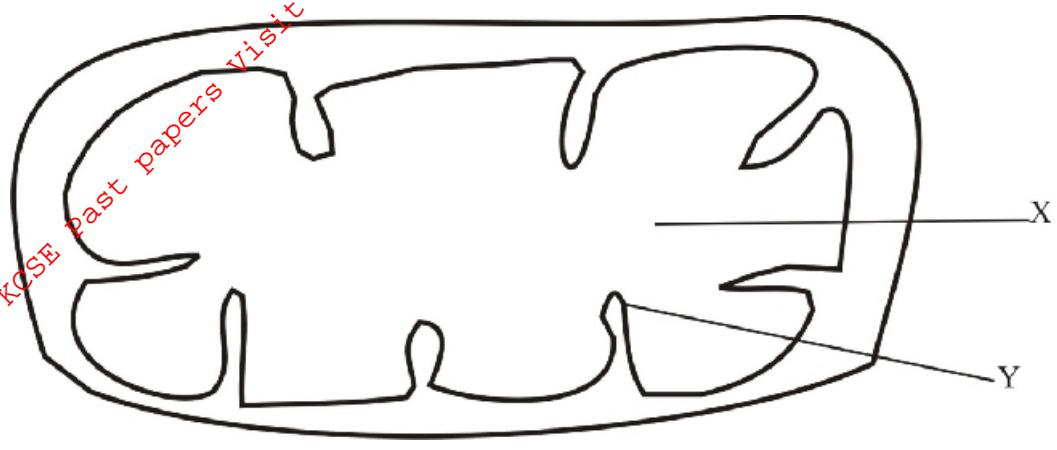
**INSTRUCTIONS TO CANDIDATES**

- a) Write your name and index number in the spaces provided above
- b) Sign and write the date of examination in the spaces provided above
- c) Answer all questions
- d) Answers must be written in the spaces provided in the question paper
- e) Additional pages must not be inserted
- f) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that not questions are missing
- g) Candidates should answer the questions in English.

**FOR EXAMINERS USE ONLY**

Question	Maximum score	Candidates Score
<b>1-30</b>	<b>80</b>	

1. State the name given to the study of
- (a) Chemical changes in living organisms .....(1mark)
- (b) Insects.....( 1mark)
2. Below is a diagram of an organelle that is involved in respiration



- (a) Name the organelle ..... ( 1mark)
- (b) Name the part labeled **X**..... (1 mark)
- (c) What is the purpose of the part labeled **Y** ..... (1 mark)

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3. Explain what would happen to an amoeba when placed in distilled water ..... (3 marks)

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4. (a) State the category of variation into which the following traits fall ..... (2 marks)

- (i) Skin pigmentation .....
- (ii) Blood group .....

- (b) Give **two** possible genotypes of blood group A. .... (1 mark)

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5. State **three** characteristics of monera that are not found in other kingdoms (3 marks)

- i).....
- ii).....
- iii).....

6. (a) Name **two** excretory products produced by both plants and animals (2 marks)

- i).....
- ii).....

(b) What is the name given to the process in which excess amino acids are broken in the liver.

.....(1 mark)

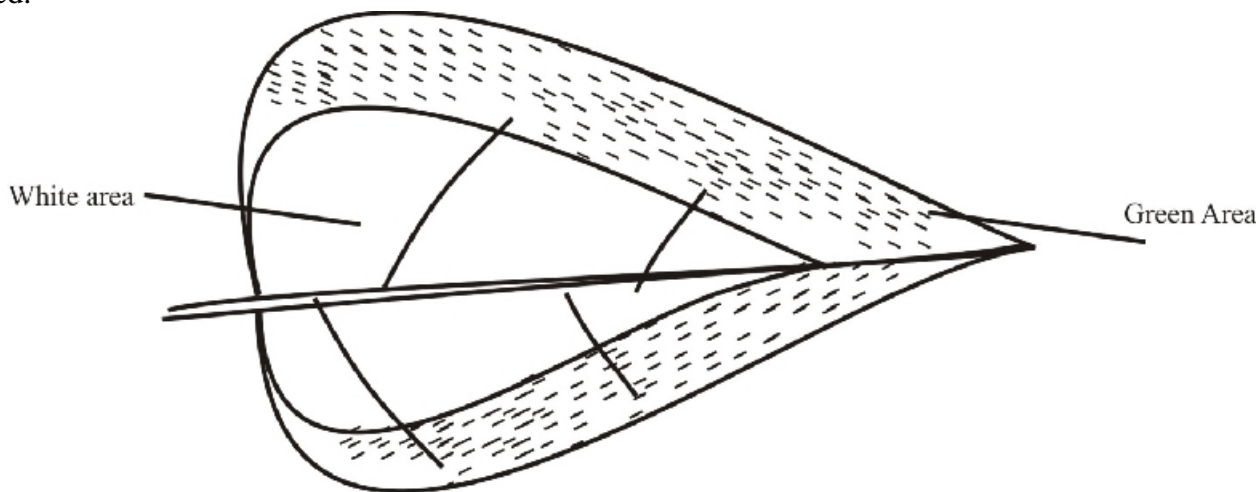
7. (a) What is meant by the following terms?

- (i) Autoecology.....(1mark)
- (ii) Habitat.....(1mark)

(b) State **two** ways in which floating leaves of aquatic plants are adapted to gaseous exchange (2marks).

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8. In an experiment to investigate a certain factor necessary for photosynthesis, a leaf shown below was used.



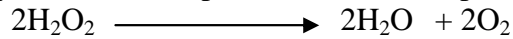
(a) What was the aim of the experiment? (1 mark)

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(b) What term is used to describe such a leaf?.....(1 mark)

(c) In the space provided below, sketch the expected observations when starch test is carried on the leaf (2 marks)

9. The equation below represents a chemical process which occurs in the mammalian body



Name the;

(a) Enzyme that controls the reaction .....(1 mark)

(b) Major organ in which the reaction occurs.....( 1mark)

(c) What is the importance of the process? ( 1mark)

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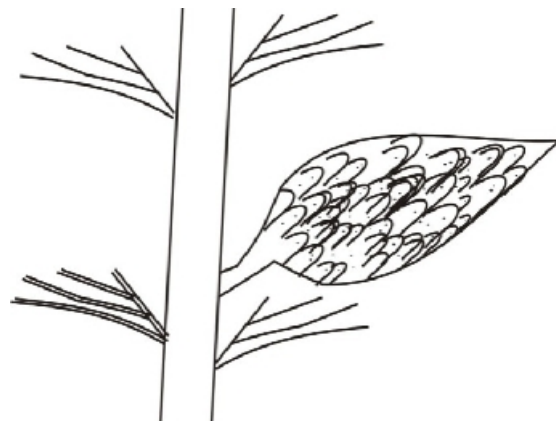
10. Name the hormones which control the following

(a) Development of male secondary characteristic.....(1 mark)

(b) Inhibits side branching in plants..... (1 mark)

(c) Moulting in insects ..... (1mark)

11. During a biological excursion a group of form three students collected a plant specimen, whose reproductive organ is shown below.



(a) Name the sub-division of the plant from which the above specimen was obtained (1 mark)

.....

(b) Other than the presence of the above characteristic, state **two** characteristics of the plants in the sub-division name above (2 marks)

i).....

ii).....

12. The shirt of a student was stained by a solution of DCPIP. A friend advised him to wash with lemon juice. Explain (2 marks)

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13 (a) State **one** distinguishing feature of fungal cells (1 mark)

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(b) State **one** similarity between members of kingdom animalia and fungi (1 mark)

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14 State the functions of each of the following parts of the axial skeleton

(a) Odontoid process ..... (1 mark)

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(b) Zygapophyses .....(1 mark)

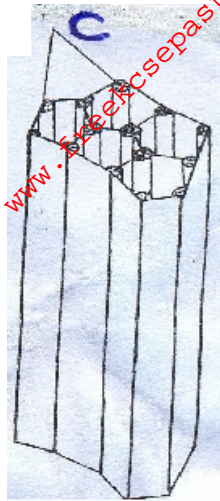
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15 Antibiotics are used to treat people with bacterial infections. Explain the danger of the widespread use of antibiotics to treat disease (3 marks)

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16 (a)(i) Identify the plant support structure illustrated below

( 1 mark)



(ii) Name the part labeled C..... (1mark)

(b) State **three** biological importance of tropism in plants (3 marks)

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17 (a) Define the term oxygen debt

(2 marks)

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.....  
.....

b) State what happens to the lactic acid produced by active muscles during anaerobic respiration (2 marks)

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18 Give a reason for each of the following

(a) The trachea of the tracheal system have circular rings of chitin ( 1 mark)

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.....

(b) Tracheoles of the tracheal system lacks rings of chitin (1 mark)

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19 (a) What is the meaning of the term organic evolution? (2 marks)

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(b) Explain the following terms;

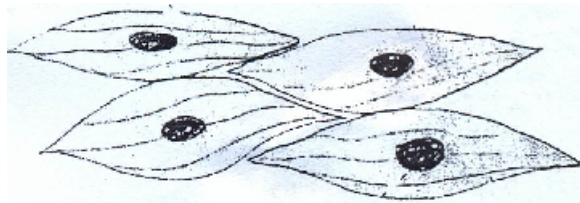
(i) Analogous structures (1 mark)

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(ii) Comparative embryology (1 mark)

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20 The figure below represents a type of muscle



(a)(i) **Identify** the type of muscle ..... (1 mark)

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

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(b) Name **two** parts of the human body where this type of muscle can be found. (2marks)

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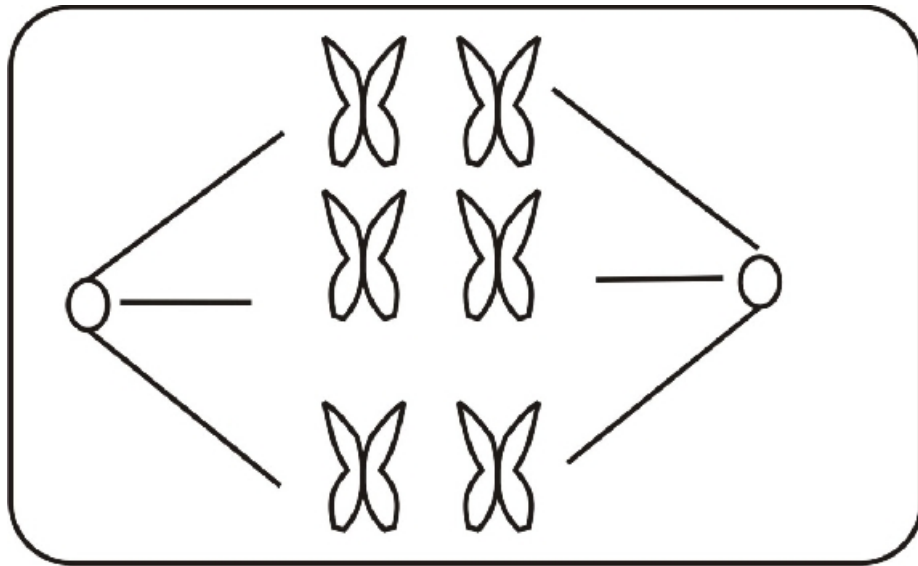
21 Describe how turgor pressure builds up. (3marks)

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22 Name the flower part that produces male gametes (1 mark)

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23 (a) The diagram below shows a cell undergoing a stage in cell division



(a) With reason, identify this stage (2 marks)

Identity .....

Reason .....

(b) Draw a diagram to show the next stage of cell division (1mark)



24. Name the parts of the brain that perform the following functions
- (a) Controls secretion of hormones by pituitary glands ..... (1 mark)
  - (b) Controls muscular movements body posture and balance..... (1mark)
  - (c) Controls reflex activities..... ( 1mark)
- 25 Name the vector and causal organism of bilharzia (2 marks)
- Vector.....
- Causal organism .....
- 26 (a) Name an end product of photosynthesis that may be found in the intercellular air spaces of a leaf .....(1 mark)
- (b) State what happens to the product named in (a) above (2 marks)
- .....
- .....
- .....
27. Name **two** structures in the mammalian ear that are used in body balance and posture (1mark)
- .....
- .....
- .....
- 28 What characteristics do gills of a fish and the mouth cavity of a frog have in common that enables them to be efficient in gaseous exchange. (3 marks)
- .....
- .....
- .....
- .....