

NAME..... INDEX NO.....
SCHOOL..... CANDIDATE'S SIGNATURE.....
DATE.....

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

KIHARU/KAHURO DISTRICT JOINT EXAMINATION – 2013

Kenya Certificate of Secondary Education
BIOLOGY
PAPER 1
(THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

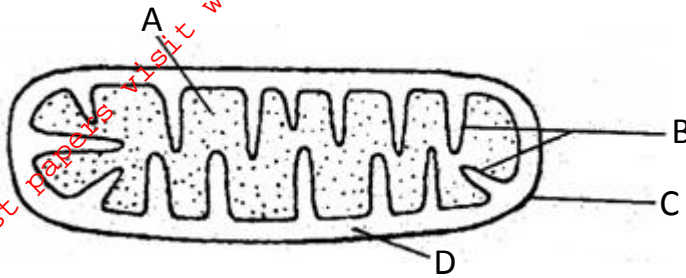
1. Write your **Name**, **Index Number** and **School** in the spaces provided above.
2. **Sign** and write the **date** of examination in the spaces provided above.
3. Answer **all** the questions in the spaces provided.
4. Answers must be written in the spaces provided in the question paper.
5. Additional pages must not be inserted.
6. Check the question paper to ascertain that all the pages are printed and that no questions are missing.

FOR EXAMINER'S USE ONLY:

Question	Maximum Score	Candidate's Score
1 - 26	80	

1. Name the causative agent of cholera. (1 mark)

2. The diagram **below** represents a cell organelle.



(a) Identify the organelle. (1 mark)

(b) Name the part labelled **B**. (1 mark)

(c) State the function of part labelled **A**. (1 mark)

3. State the functions of the following parts of a light microscope.

(a) Condenser. (1 mark)

(b) Diaphragm. (1 mark)

4. (a) Explain **three** ways in which a red blood cell is adapted to its function. (3 marks)

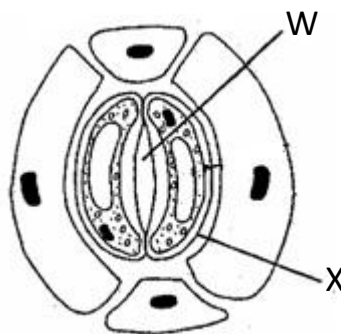
(b) In which form is carbon (IV) oxide transported. (1 mark)

5. State the functions of the following organelles.

(i) Centriole. (1 mark)

(ii) Nucleolus. (1 mark)

6. The diagram **below** shows part of plant tissue.



(a) Name cell labelled **X** and part labelled **W**. (2 marks)

X _____

W _____

(b) State **two** adaptations of cell labelled **X** to its function.

7. (a) Differentiate between hypogeal germination and epigeal germination. (2 marks)

(b) State **two** causes of dormancy in seed. (2 marks)

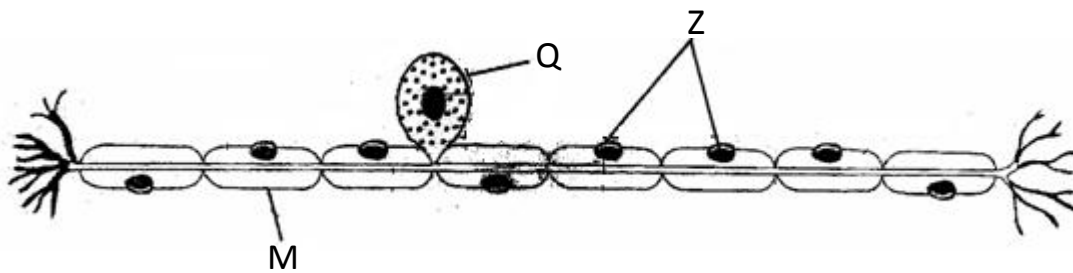
8. (a) Define polyploidy. (1 mark)

(b) Name **three** disorders resulting from gene mutations. (3 marks)

9. (a) Distinguish between homologous and analogous structure. (2 marks)

(b) Explain the term continental drift as used in evolution. (2 marks)

10. The diagram **below** represents a sensory cell.



(a) Identify with a reason the type of neurone above. (1 mark)

Reason: (1 mark)

(b) Name parts labelled. (2 marks)

Q _____

Z _____

11. (a) Name **three** supportive tissues in plants. (3 marks)

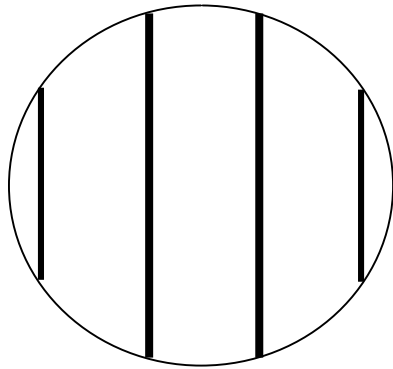
(i) _____

(ii) _____

(iii) _____

(b) Name the type of muscles found in the gut. (1 mark)

12. A form one student trying to estimate the size of onion cells observed the following on the microscope's field of view.



(a) Define the term resolving power. (1 mark)

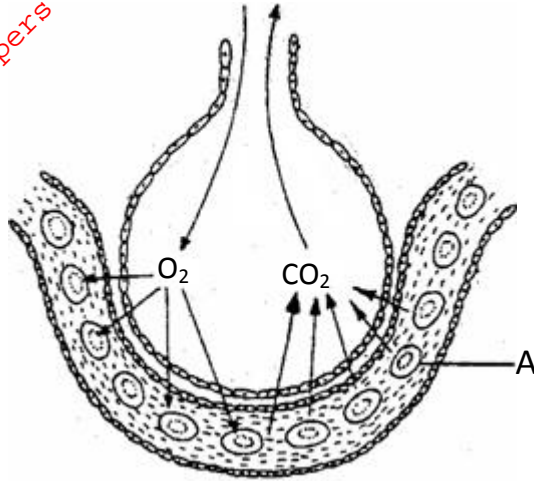
(b) If the student counted 20 cells across the field of view calculate the size of one cell in micrometers. (2 marks)

13. (a) Distinguish between transpiration and guttation. (2 marks)

(b) State **two** importance of guttation in hydrolytes.

(2 marks)

14. The diagram **below** shows the exchange of gases in alveolus.



(a) State how the alveoli are adapted to their function.

(3 marks)

(b) Name the cell labelled A.

(1 mark)

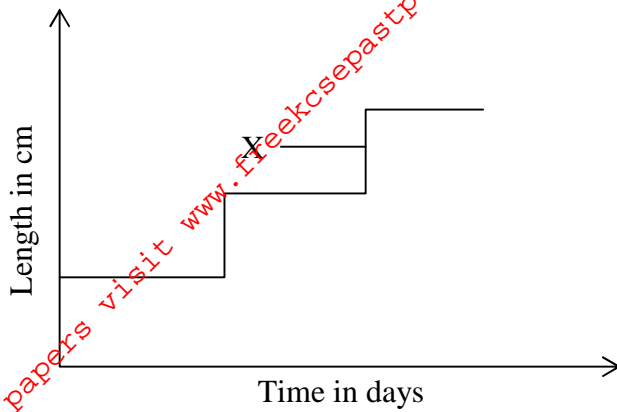
15. (a) Distinguish between respiratory quotient and oxygen debt.

(2 marks)

(b) Name the site where anaerobic respiration occurs in the cell.

(1 mark)

16. Study the graph **below** and answer the questions that follow.



(a) What is the name given to the type of graph? (1 mark)

(b) What is the name used to describe point X. (1 mark)

(c) State the importance of part X. (1 mark)

(d) Name the phylum in which the graph represented in above occurs. (1 mark)

17. (a) Define the term natural selection. (1 mark)

(b) Name **three** evidence of organic evolution. (3 marks)

18. State **one** adaptation of the following parts of mammalian eye.

(i) Fovea centralis.

(1 mark)

(ii) Sclera.

(1 mark)

(iii) Ciliary body.

(1 mark)

19. Name the cartilage found between vertebrae of the vertebral column.

(1 mark)

20. (a) Differentiate between gaseous exchange and ventilation.

(2 marks)

(b) Name the respiratory sites of the following:

(i) Fish

(1 mark)

(ii) Insects

(1 mark)

21. (a) Name **two** cardiovascular diseases. (2 marks)

(b) If the nerve supply to the heart of a mammal is severed the rhythmic heart contraction and relaxation will go on and heart continues to beat. Explain why. (2 marks)

22. Name **two** major branches of Biology. (2 marks)

23. (a) State the functions of the following apparatus.

(i) Bait trap. (1 mark)

(ii) Pooter. (1 mark)

24. State **two** structural adaptations of veins to their function. (2 marks)

25. Name the process that results to formation of tissue fluid. (1 mark)

26. What is serum? (1 mark)

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