

NAME

ADM NO

SCHOOL.....

STREAM.....



PEDIGREE JOINT EXAMS

Kenya Certificate of Secondary Education

231/1

BIOLOGY
(Theory)

Paper 1

February 2024 – 2 Hours

TRIAL ONE

Instructions to candidates

- Write your name and Admission Number in the spaces provided above.
- Write your class, date of examination and sign in the spaces provided above.
- Answer ALL the questions in this paper.
- All your answer must be written in the spaces provided in the question paper.
- This paper consists of **10** printed pages.
- Candidate should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
- Candidates must answer the questions in English.

For Examiner's Use Only

Questions	Maximum Score	Candidate's Score
1-30	80	

1. Apart from mastication, give other two activities along the gut that increases surface area of food substances for action of enzymes (2marks)

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2. Below is a photograph of a plant. Examine it



- a) Identify the class to which the plant belongs (1mark)

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- b) Give two reasons for your answer in (a) above based on observable features only

(2marks)

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3. Give two structural similarities between oviduct and sperm duct (2marks)

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4. Explain the effect of applying skin lightening creams continually over a long period of time (2marks)
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5. a) Give the osmotic problem faced by marine fish (1mark)
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- b) Explain how marine fish overcome the problem stated in (a) above (2marks)
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6. Write word equation for aerobic respiration phase that takes place in
- a) Cytoplasm of cells (1mark)
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- b) Matrix of mitochondria (1mark)
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7. Give two precautions observed to protect light microscope from rusting (2marks)
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8. Give functions of the following blood vessels

a) Arteries

(1mark)

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b) Capillaries

(1mark)

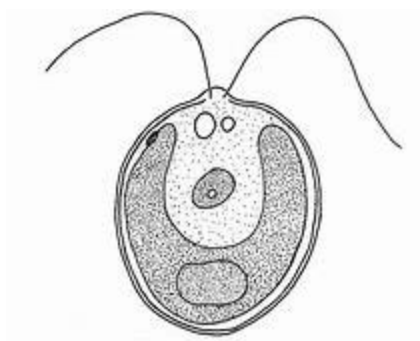
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9. Name two plant cells which contain numerous mitochondria

(2marks)

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10. The diagram below represents an organism. Examine it



a) Identify the mode of nutrition exhibited by the above organism

(1mark)

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b) Give one ecological role played by above organism in its habitat

(1mark)

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c) Name one process which utilizes carbon (IV) oxide in human beings

(1mark)

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11. Explain how emotions affects the rate of gaseous exchange (3marks)

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12. Below is a list of traits in human beings;

- Span of the hand
- Finger print
- Intelligence
- Type of earlobe

a) From the list, identify two traits that can be influenced by environment (2marks)

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b) State the function of transfer ribonucleic acid (1mark)

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13. A group of Maseno school students killed a dog and dumped it in an open field. After four days, they observed that the dead body of the dog was colonized by several maggots

a) Account for the observation made by the students (2marks)

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- b) Name one environmental factor that could increase the rate of decomposition of the dead body of the dog (1mark)

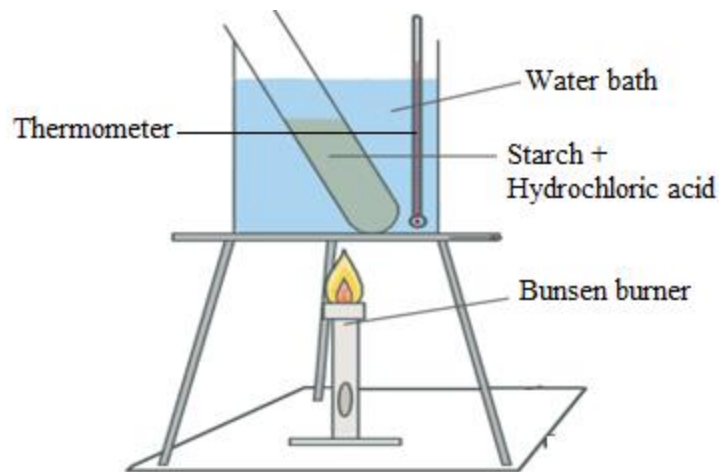
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14. Apart from intestines, name other two organs where villi are found (2marks)

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15. A group of students made the following to investigate a certain process. The starch was boiled in hydrochloric acid for 5 minutes after which the boiling tube was removed and cooled.



- a) State the observation made when the students placed a drop of mixture from the test tube on a white tile and added two drops of iodine solution to it (1mark)

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- b) Account for the observation stated in (a) above (2marks)

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c) Name a chemical substance that the students would have used in place of

hydrochloric acid

(1mark)

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16. State three events which prepares a plant cell for actual mitotic division

(3marks)

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17. Give three natural resources whose conservation requires biology knowledge

(3marks)

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18. State two ways in which pollination differ from fertilization

(2marks)

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19. Give two forms in which excess glucose is stored in animal tissues

(2marks)

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20. Plants growing in high altitude areas tend to have hairy leaves. Explain

(3marks)

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21. State two uses of suckers in parasites

(2marks)

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22. Give three indicators of conception in human beings

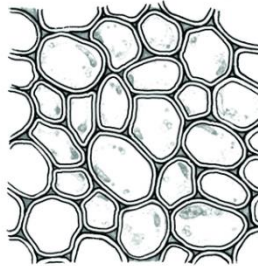
(3marks)

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23. Below is a diagram of a tissue found in plants. Examine it



a) Identify the above tissue

(1mark)

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b) Describe how the above tissue brings about mechanical support in plants

(3marks)

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24. Name three modes of excretion in human beings

(3marks)

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25. Explain how the following antibodies fights pathogens in the body

a) Lysins (1mark)

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b) Opsonins (1mark)

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26. State two ways in which the teeth of carnivores adapts them to their mode of feeding

(2marks)

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27. Give three environmental factors that may increase stomatal opening (3marks)

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28. Name the gaseous exchange site in the following organisms

a) Cockroach.....(1mark)

b) Tilapia.....(1mark)

c) Ostrich.....(1mark)

29. Give two reasons why bulk of carbon (IV) oxide is transported in erythrocytes (2marks)

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30. The table shows chlorophyll content per leaf of two species of grass

Chlorophyll content	Chlorophyll content ($\mu\text{mol per cm}^2$ of leaf)
Plant P	200
Plant Q	675

a) What is the role of chlorophyll in photosynthesis? (1mark)

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b) Which plant species would experience higher rate of photosynthesis if the plants were subjected to similar environmental conditions? Give a reason for your answer

(2marks)

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c) Give two environmental conditions under which chlorophyll content in plant leaves reduces (2marks)

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