

NAME.....CLASS.....

SCHOOL.....SIGNATURE.....

231/1

**KENYA CERTIFICATE OF SECONDARY SCHOOL**

*WESTLANDS SUBCOUNTY JOINT EXAMINATIONS*

**NOVEMBER/DECEMBER 2021**

**TIME: 2HOURS**

**INSTRUCTIONS**

- a. Write your name, school and class in the spaces provided
- b. Answer **all** the questions in the spaces provided.
- c. This paper consists of **9** printed pages
- d, Candidates should check the question paper to ascertain that all the pages are printed as indicated and no questions are missing.

**FOR EXAMINERS USE ONLY**

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1-31	80	

1. Name **two** branches of microbiology (2marks)

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2. Give **two** important functions of a fruit with regard to a plant (2marks)

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3. Construct a food chain with the following: (1mark)

Orange fruit, large bird, fruit fly, small bird

4. A student wrote the scientific name of Baobab tree as *adansonia Digitata*.

(a) Identify two mistakes made by the student (2marks)

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(b) Identify the species name (1mark)

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5. State the differences between light and electron microscopes in terms of the following:

(2marks)

(a) way of illumination

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(b) Source of illumination

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(c) State two factors to consider the type of microscope to be used in a given biological investigation (2marks)

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6. Explain how parasitism differ from predation (2marks)

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7. (a) Explain how papain is used as a meat tenderizer in food processing industries (2marks)

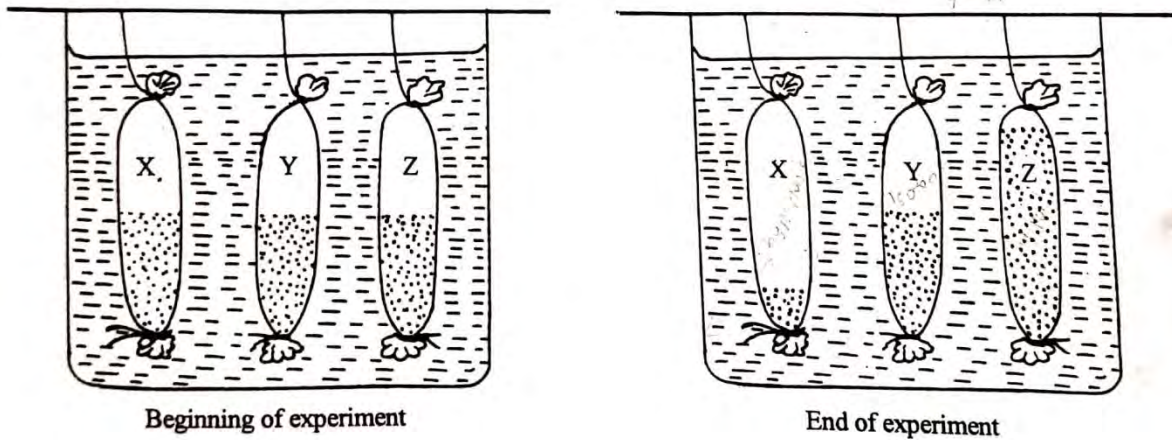
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(b) Name a plant excretory product that is toxic to plasmodium (1mark)

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8. Distinguish between ilium and ilium (1mark)

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9. Explain why Egyptian mummies are not regarded as fossils (1mark)

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10. Explain what would happen to digestion and blood sugar regulation if the pancreatic duct of a mammal was blocked. (3marks)

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 11. Equal amounts of three different sugar solutions were placed in the visking tubings X, Y and Z. the tubings were placed in a beaker of water containing 5% sugar solution. The set up was left for two hours. The results were as shown below.



(a) Name the process being tested in this experiment (1mark)

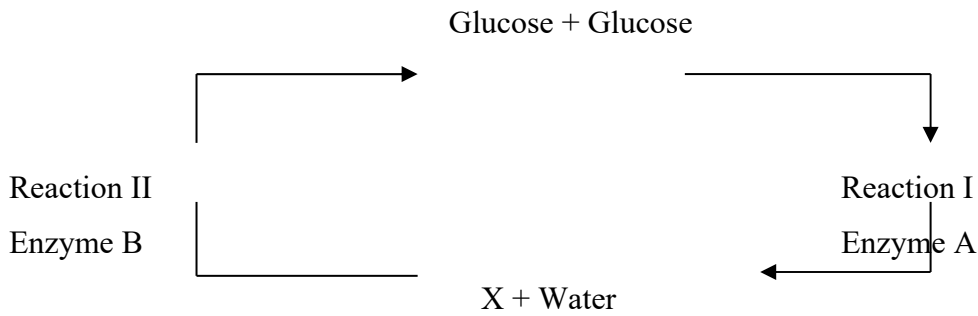
(b) Account for the observation (3marks)

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 12. (a) Define the term allergy (1mark)

(b) Distinguish between allograft and isograft (2marks)

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 13. State **two** adaptations of the placenta to its function (2marks)

14. The diagram below shows chemical reactions I and II which are controlled by enzymes.

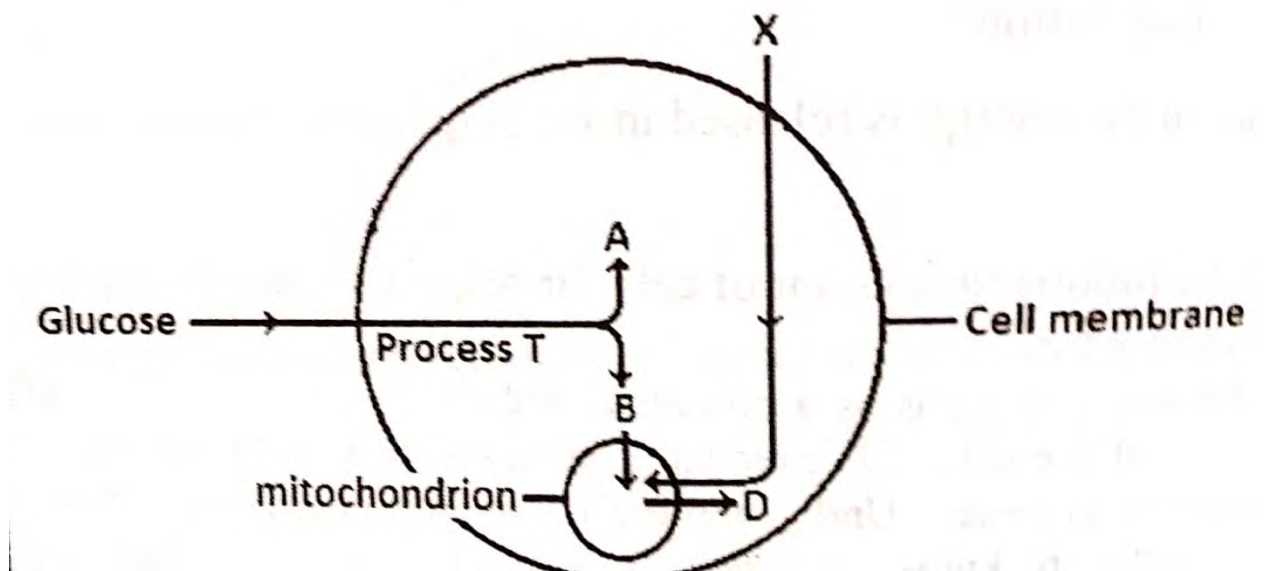


(i) Into which class of carbohydrates is X? (1mark)

(ii) Name reaction I and enzyme A (2marks)

Reaction I.....  
 Enzyme A.....

15. The figure below illustrates aerobic respiration in a cell



(a) Name the raw material named X and products A and B (3marks)

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(b) Identify process T (1mark)

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16. Name a characteristic in man controlled by multiple alleles (1mark)

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17. Some scientists argue that Lamarck's theory is false and not valid. What is your scientific view on this? (3marks)

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18. State **two** natural ways in which in which seed dormancy can be terminated (2marks)

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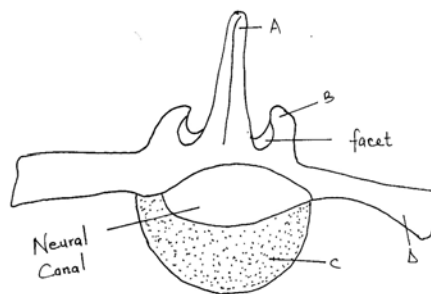
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19. Explain why the temperate bears have thick adipose tissues (2marks)

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20. Study the diagram shown below of the anterior view of a lumbar vertebra of a mammal.



(a) Name the parts labelled: A, and B, (2 marks)

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(b) State the adaptation of the part labelled **D**. (1 mark)

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21. Distinguish between parthenocarpy and parthenogenesis (2marks)

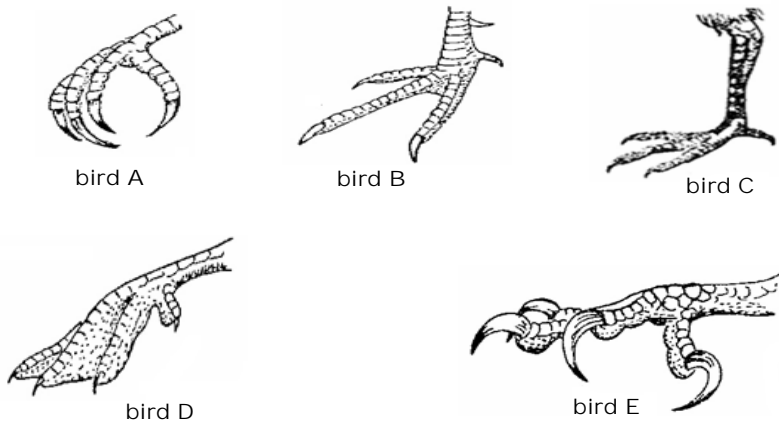
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22. State **three** symptoms of menopause (3marks)

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23. The figure below shows feet of various birds. Study the diagram and answer the questions that follow.



(i) Name the type of evolution represented by the diagrams. (1 mark)

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(i) Using Darwin's theory of evolution, explain how the feet of **bird E** would have evolved. (3 marks)

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24. Describe how contraction of the diaphragm muscles leads to inhalation (4marks)

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25. Explain the effect of burning of fossil fuels on the health of humans (3marks)

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26. State **two** distinguishing characteristics of members of the kingdom Monera (2marks)

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27. State **two** structural differences between the xylem and the phloem (2marks)

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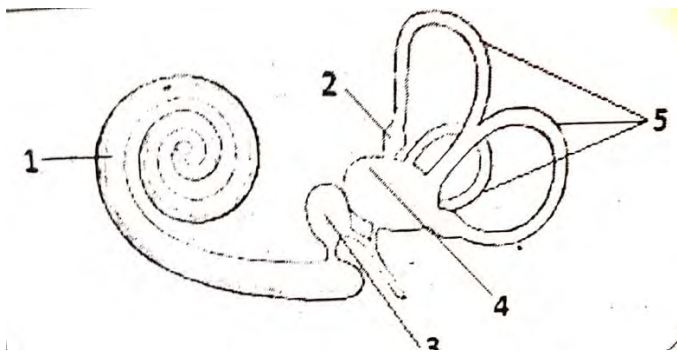
28. Explain why seeds buried deep in the soil fail to germinate (2marks)

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29. Explain how starch provides energy for living organisms (2marks)

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30. The diagram below shows part of the inner ear



(a) Name the apparatus (1mark)

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(b) State the function of the apparatus (1mark)

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(c) Name the parts labeled 1 and 5 (2marks)



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31. (a) state the role of the following hormones during lactation (2marks)

(i) Prolactin

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(ii) Oxytocin

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(b) Other than the role mentioned above, give another role of oxytocin in the body of a female (1mark)

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