MASENO SCHOOL

JULY/AUGUST MOCK - 2024

231/1 BIOLOGY Paper 1 (Theory)

Name ……..…… Index Number……...…….....…….....…..

Class …….…… Date …….……Signature……...…..……..

Instructions to candidates

a) Write your name and Admission Number in the spaces provided above.
b) Write your class, date of examination and sign in the spaces provided above.
c) Answer ALL the questions in this paper.
d) All your answer must be written in the spaces provided in the question paper.
e) This paper consists of 12 printed pages.
f) Candidate should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
g) Candidates must answer the questions in English.

For Examiner's Use Only

Questions	Maximum Score	Candidate's Score
1-35	80	

1. The diagrams below represent types of gynoecium in two different flowers.

P Q

Name the types of gynoecia represented by P and Q

P……. (1 mark)

Q……. (1 mark)

2. a) Name the disorder that arises from non-disjunction on chromosome number 21 during meiosis.

(1 mark)

……

b) Give one symptom of the disorder named in (a) above (1 mark)

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3. Explain how epidermal hairs affect the rate of transpiration in Xerophytes (2 marks)

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4. The bone marrow of the sternum was affected by pathogens. After a few days, the count of two cellular components of blood had reduced. Identify the two blood cells (2 marks)

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5. Plants show alternation of generations. Name the dominant generation in;

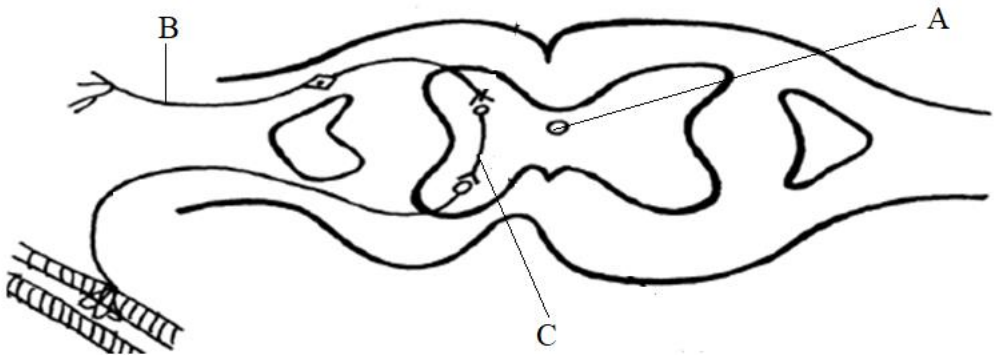
a) Pteridophytes (1 mark)

……..

b) Bryophytes (1 mark)

……..

6. The diagram below shows a simple reflex arc. Study it.



a) Describe the role of the part labelled A (2 marks)

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b) State twos structural differences between cell labelled B and C (2 marks)

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7. Name any two gaseous exchange sites in Halophytes (2 marks)

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8. Name the two muscles that alter the diameter of pupil due to varying light intensity (2 marks)

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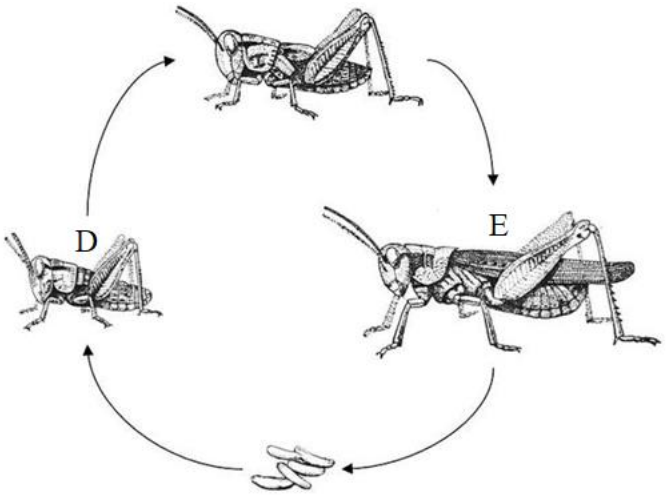
9. Below is a diagram showing stages of life cycle in an insect.



a) Name the type of metamorphosis illustrated (1 mark)

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b) State two differences between stage D and E (2 marks)

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10. Name the taxonomic units whose members

a) Have most similarities (1 mark)

……

b) Have most differences (1 mark)

……

11. Name the enzyme secreted by acrosome and state its role

a) Enzyme (1 mark)

……..……

b) Role (1 mark)

……

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12. Below is a table that shows the concentration of sodium ions and chloride ions in pond water and cell sap of an aquatic plant.

Ions	Concentration in pond water	Concentration in cell sap
Chloride	130	50
Sodium	0.8	90

a) Explain the effect of increase in rate of Carbon (IV) oxide fixation in absorption of Sodium ions (2 marks)

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b) Name any two processes in animals that are dependent on the physiological process by which chloride ions are absorbed. (2 marks)

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13. a) Why is a bacterium considered prokaryotic? (1 mark)

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……

b) Name the mode of nutrition in Rhizopus (1 mark)

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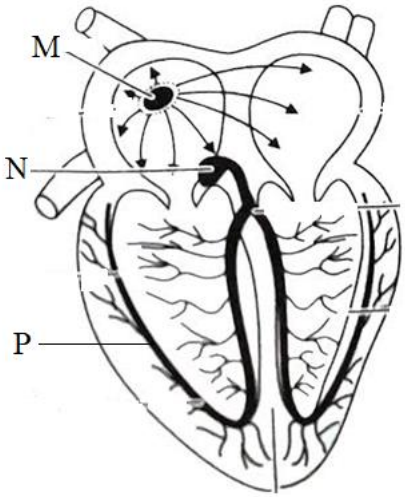
14. Below is a diagram showing the specialized areas of the cardiac muscles, study it and answer the questions that follow.



a) Name the specialized areas labelled M and N

M…… (1 mark)

N…… (1 mark)

b) Describe the role of M in heartbeat (2 marks)

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15. Explain why X-linked recessive traits tend to affect the male child commonly as compared to female child. (2 marks)

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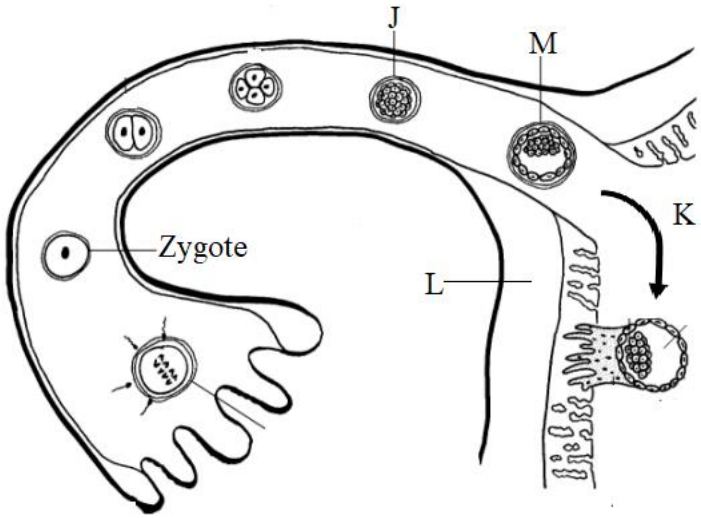
16. Below is a diagram showing the female reproductive system. Use it to answer the questions that follow.



a) Identify the process labelled K and the structure J

Process K……..…….. (1 mark)

Structure J……...……. (1 mark)

b) Name the hormone that causes the contraction of muscles at L (1 mark)

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17. Give any two examples of secondary sexual characteristics in human males (2 marks)

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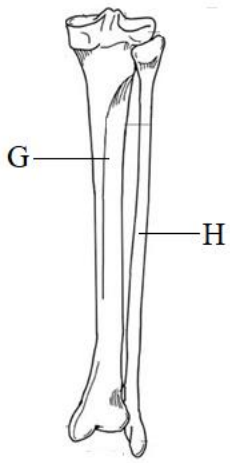
18. The diagram below shows two bones obtained from the skeleton of a mammal.



a) Identify the bones that articulate with the two bones at the Distal end. (1 mark)

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b) Name the type of joint formed when the bones identified in (a) above articulate with the bones G and H (1 mark)

……

c) State one function of olecranon process (1 mark)

……...

19. Account for the small quantity of concentrated urine excreted two hours after taking a salty soup.

(3marks)

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20. State the role of a named endoplasmic reticulum. (2 marks)

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21. Explain the following

a) Hydrophytes have poorly developed roots that lack root hairs (1 mark)

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……..……..

b) Diarrhea is a major symptom of Cholera (2 marks)

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22. State the differences in the arrangement of vascular bundles in the stem and root of a dicotyledonous plant (2 marks)

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23. Mosquitoes, grasshoppers and weevils have their mouth parts adapted to sucking, biting and piercing respectively. Name;

a) The type of evolution exhibited by the mouth parts (1 mark)

……..……..……..

b) The type of evolutionary structures (1 mark)

…….

24. Below is an animal dental formula. Examine it.

i 0/1 c 0/1 pm 3/3 m 3/3

a) With a reason suggest the most appropriate mode of feeding for the above organism

Mode……... (1 mark)

Reason …… (1 mark)

b) Explain the role of Enterokinase in protein digestion (2 marks)

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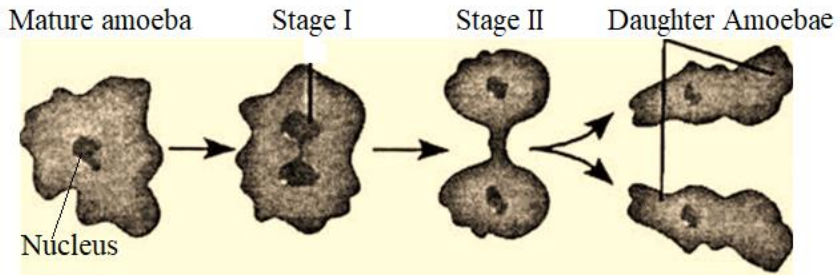
25. Below are diagrams illustrating a type of asexual reproduction. Study it



a) Identify the type of asexual reproduction above. (1 mark)

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b) Identify stage I (1 mark)

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26. Identify the most likely habitat of the organisms that excrete the following nitrogenous wastes

a) Trimethylamine oxide (1 mark)

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b) Ammonia (1 mark)

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27. Explain how the study of biology has enhanced classification. (1 mark)

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28. Explain why palisade tissue is the main photosynthetic tissue in plants (2 marks)

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29. Explain why the rate of Carbon (IV) oxide absorption is higher than the rate of Oxygen absorption during the day in plants. (1 mark)

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30. Explain why insect larvae must periodically position itself on water surface (2 marks)

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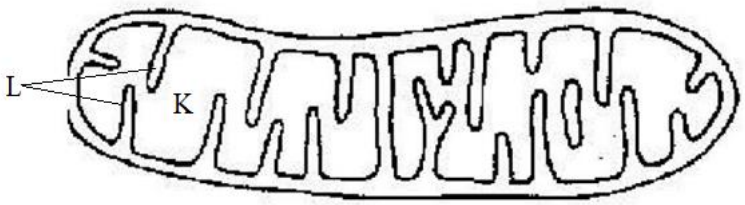
31. Below is a diagram of an organelle obtained from a cell.



a) Write an equation for the process that occurs at the part labelled K (1 mark)

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……

b) How does the part labelled L adapt the organelle to its function? (1 mark)

……

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32. Name any one respiratory disease that affect breathing system (1 mark)

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33. State the form in which fatty acids and glycerol are absorbed at the lacteals (1 mark)

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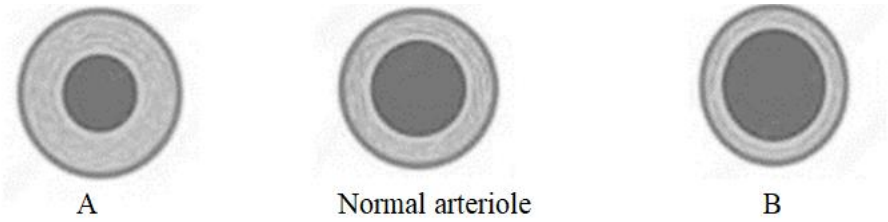
34. The diagram below represents the cross section of a normal arterial and the changes on its size A and B under different conditions.



a) State the environmental conditions under which the change represented by A is expected.

(1 mark)

……...……

b) State the significance of appearance of blood vessel A shown in the diagram (1 mark)

……..

c) Name the phenomenon represented by B (1 mark)

……...……

35. Give two reasons for increased heart beat during strenuous physical exercise (2 marks)

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