MASENO SCHOOL

Kenya Certificate of Secondary Education 2020

231/1 - BIOLOGY -Paper 1

(THEORY)

DEC. 2020 - 2 hours

THE MASENO SCHOOL MOCK

231/1-Biology- P1
Wed. 09/12/2020
Time: 8:00am -10.00am

Name …… **Index Number**……..

Candidate's Signature ……..…….. **Date** ……

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1. *Write your **name** and **index number** in the spaces provided.*
2. ***Sign** for examination in the spaces provided.*
3. *Answer **all** the questions in the spaces provided.*
4. *Answers must be written in the spaces provided in the question paper.*
5. *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
6. *The paper consists of **12** printed pages.*

FOR EXAMINER'S USE ONLY:

Question	Maximum Score	Candidate's Score
1 – 28	80	

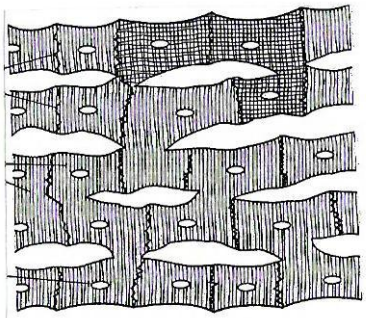
1. Name the method of specimen collection by use of;

Pooter …….....…… (1mark)

Pair of forceps…….. …….. (1mark)

Sweep net ……... (1mark)

2. Below is a diagram of a specialized tissue



a) Name the organ where above tissue is found (1mark)

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b) State two adaptations of the above tissue to its function (2marks)

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3. Give three adaptive features in tilapia which reduces friction between the body and the water during locomotion. (3marks)

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4. Explain how adequate water supply increases the rate of glucose formation in plants (3marks)

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5. a) What is coexistence as used in ecology? (1mark)

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b) Give two ways in which coexistence eliminates competition among herbivores living in the same habitat. (2marks)

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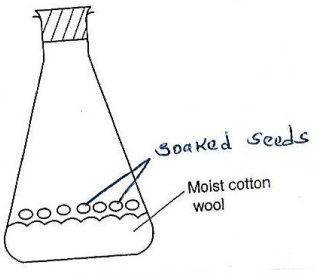
6. A group of Maseno school students made the following set up during class experiment.



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

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b) State and explain the observation made in the flask. (3marks)

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c) Suggest a suitable control for the experiment (1mark)

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7. Name the polysaccharide which offers mechanical support in ;

a) Arthropods……. (1mark)

b) Plants …… (2marks)

8. The equation below represents a reaction which occurs during strenuous physical activities in human muscles.

Glucose ⟶ compound B + 150kj

a) Give two effects of the above reaction to an individual (2marks)

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b) State two ways in which compound B is eliminated from the muscle tissue. (2marks)

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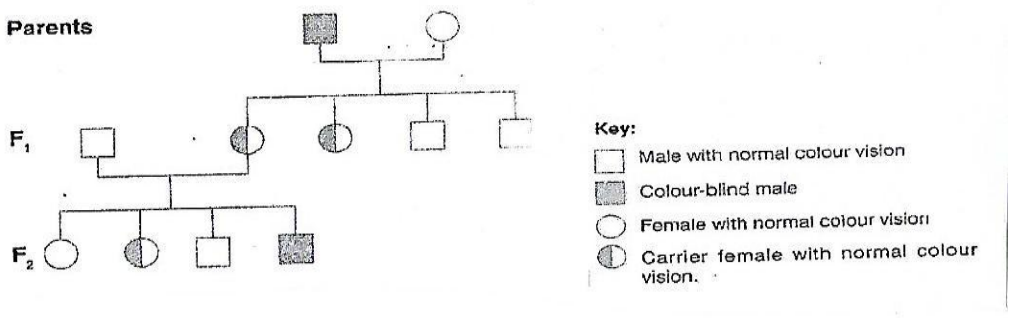
9. Color blindness is caused by a recessive gene located on X chromosome. The flowchart below shows transmission of the trait through three generations.



a) What is the name of the above flowchart? (1mark)

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b) Using letter N to represent the gene for normal color vision, give the genotype of the male parent (1mark)

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c) Explain why the two sons in F1 generation have normal color vision yet their father is color blind. (2marks)

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10. a) Differentiate between transpiration stream and transpiration pull (2marks)

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b) Explain how the following features adapts the root hair cell for absorption of mineral ions of varying concentration in soil water.

Large vacuole (1mark)

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Numerous mitochondria (1mark)

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11. Nutrients are recycled in an ecosystem but energy is not recycled. Explain (2marks)

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12. State three differences between photosynthesis and respiration (3marks)

Photosynthesis	Respiration

13. a) Explain how the endolymph performs its function in the process of hearing. (2marks)

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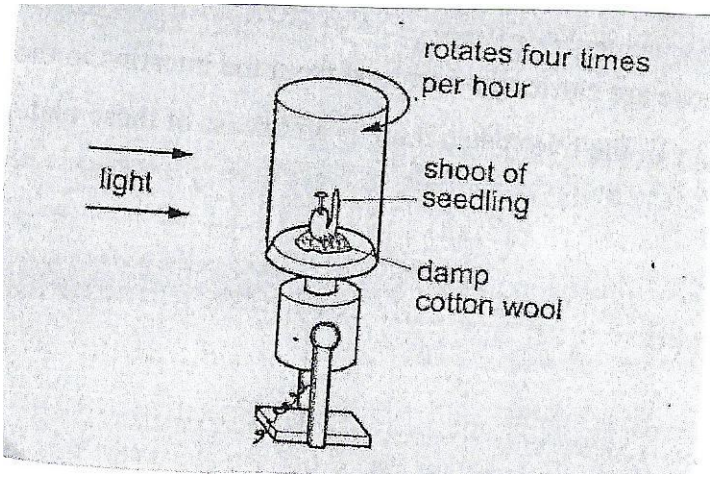
b) The diagram below shows the shoot of a live seedling, fixed to a rotating platform that is lit from one side only



The platform was allowed to rotate for two days then left stationary for a further two days.

i) Draw a diagram of the seedling only to show its appearance after day four. (1mark)

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ii) State the aim of the above experiment (1mark)

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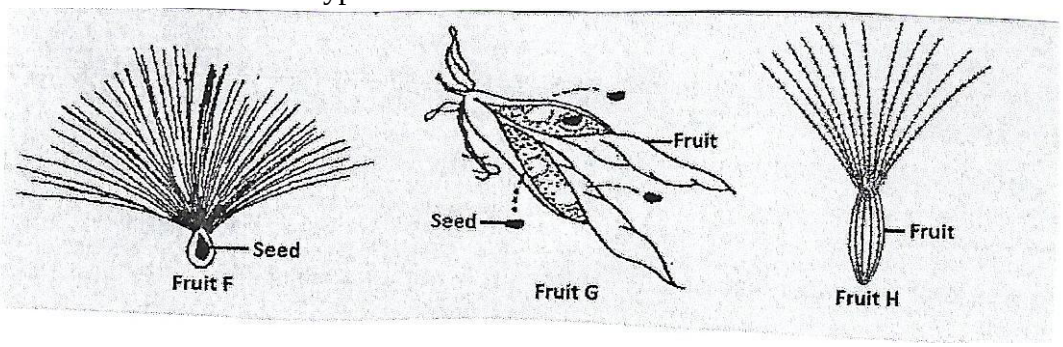
14. The diagrams below illustrates three types of fruits



a) State the modes of dispersal for fruits F and H (2marks)

F…….

H…….

b) Identify the type of fruit G (1mark)

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15. a) What are fossils as used in evolution? (1mark)

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b) State two views of the theory of chemical evolution (2marks)

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16. State two possible effects of long-term drug abuse on the brain (2marks)

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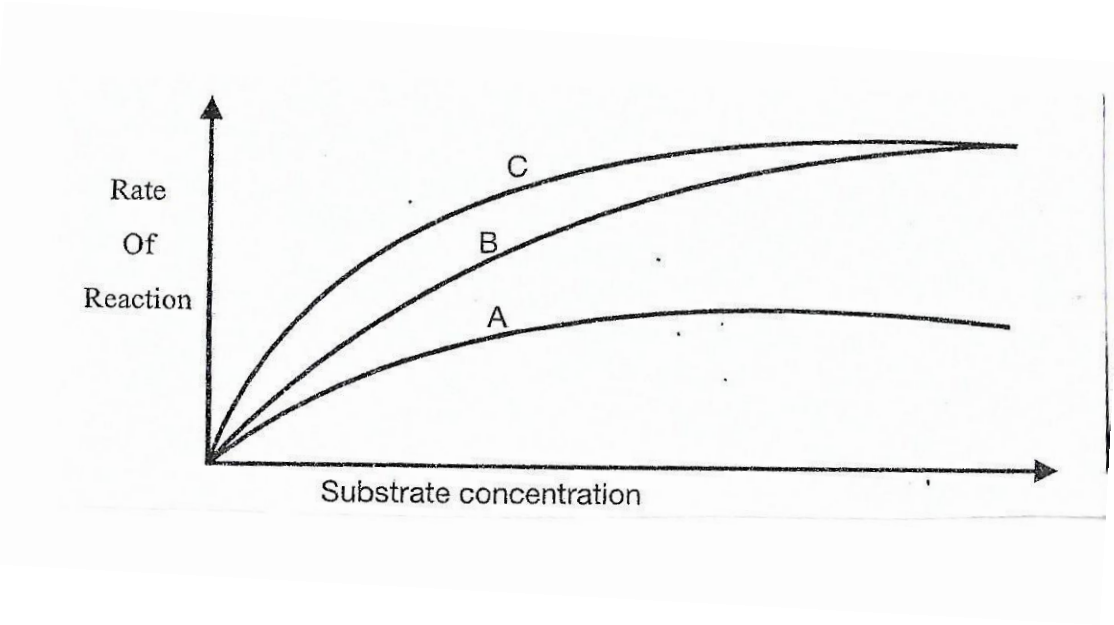
17. The diagram below shows the effect of enzyme inhibition on the rate of enzyme reaction



a) Identify the curve that represents the non-competitive inhibitors (1mark)

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b) Explain your answer in (a) above (2marks)

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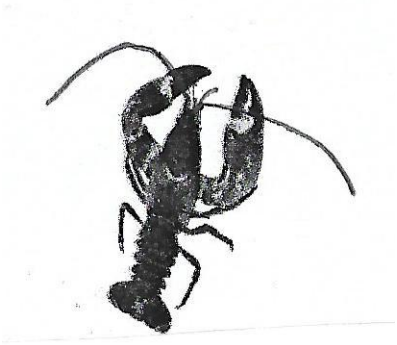
18. The diagram below represents a certain organism collected by a form three student at the sea shore.



a) Name the class to which the organism belongs (1mark)

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b) Give two reasons for your answer in (a) above (2marks)

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c) Give one ecological role of this organism in its habitat (1 mark)

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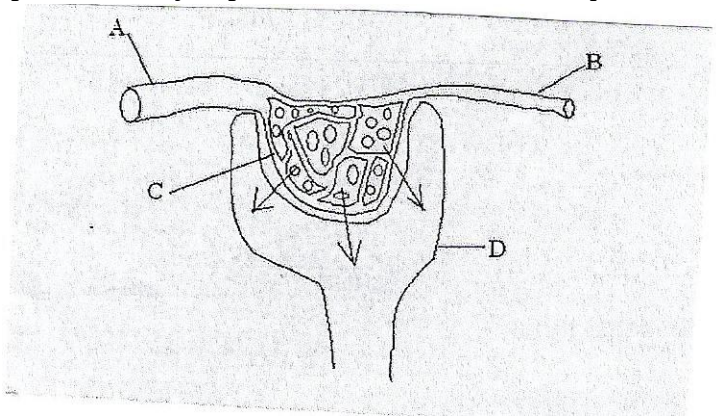
19. The diagram below shows part of kidney nephron. Use it to answer the question that follow.



a) Name the parts labelled A and C (2marks)

A…….

C……

b) Explain how the fluid in D is formed. (2marks)

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20. Name two parts of human brain involved in osmoregulation (2marks)

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21. Both inhalation and exhalation reduce the amount of carbon (IV) oxide in the mammalian blood. Explain (3marks)

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22. a) State the function of spiral bands of chitin in the tracheae of terrestrial insects. (1mark)

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b) Explain why mosquito pupae cannot stay for long under the water. (2marks)

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23. Explain the role of the hormone oestrogen in the process of parturition (3marks)

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24. The average length of the chicken egg is 55cm while that of the human ovum is 0.1mm. Explain (3marks)

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25. State three roles of osmosis in human body (3marks)

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