



MASENO SCHOOL MOCK – 2022

Kenya Certificate of Secondary Education



231/2

Paper 2

BIOLOGY

Sept. 2022 – 2½ hours

Name Admission Number

Class Date Candidate's Signature.....

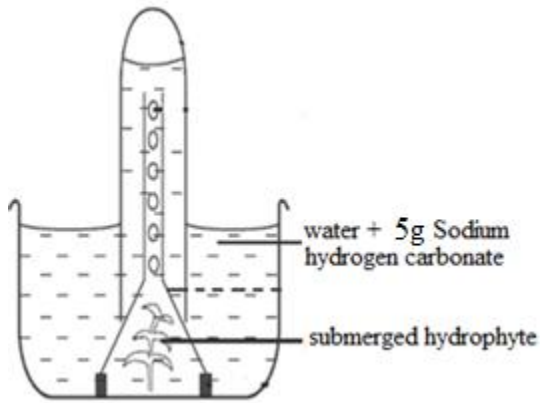
Instructions to candidates

- Write your name and admission number in the spaces provided above.
- Write your class, the date of examination and sign in the spaces provided above.
- This paper consists of **two** sections; **A** and **B**
- Answer all the questions in section **A** in spaces provided
- In section **B**, answer question **6 (compulsory)** and either question **7** or **8** in the spaces provided after question **8**.
- This paper consists of **10** printed pages.
- Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
- Candidates should answer the questions in English.

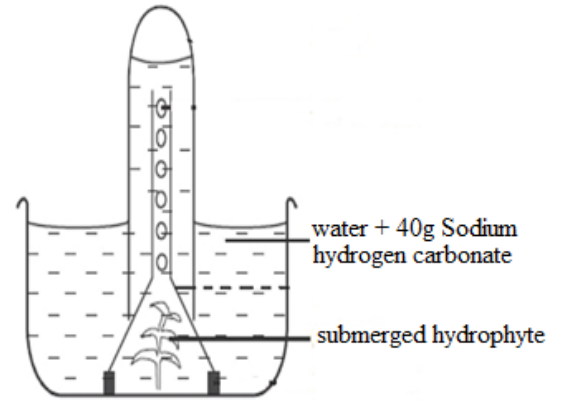
For examiners use only

Section	Question	Maximum Score	Candidate's Score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
		20	
Total score		80	

1. To investigate a certain factor affecting the rate of photosynthesis, a group of students made the following set up. They used equal amount of distilled water in each set up with varying amount of sodium hydrogen carbonate.



EXPERIMENT 1



EXPERIMENT 2

- a) Name the factor under investigation (1 mark)

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- b) State the expected observation from the above experiments (2 marks)

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- c) Explain your answer in (b) above (3 marks)

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- d) Give two reasons why only submerged hydrophytes are used in this experiment. (2 marks)

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2. A man experienced non- disjunction during meiosis. If the woman he married had normal gamete formation process,

a) Work out the likely phenotypes of their offspring (4 marks)

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b) State two characteristics of individuals with Downs Syndrome (2 marks)

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c) Give two advantages of transgenic plants (2 marks)

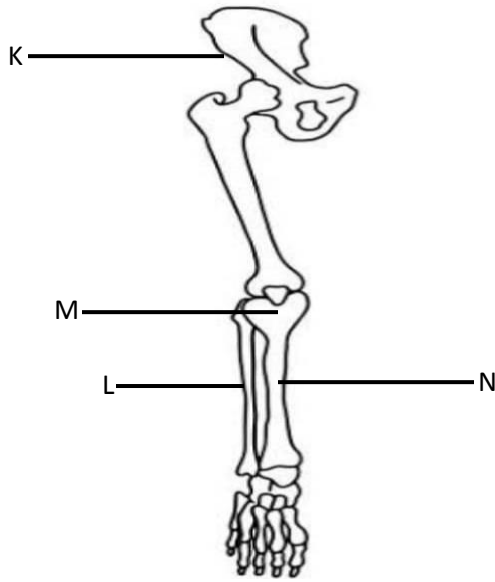
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3. The photograph below shows part of human skeleton



a) Name the bones labeled K and L

K..... (1 mark)

L..... (1 mark)

b) State two functions of bone labeled M

(2 marks)

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c) Name the type of joint formed by bone N

i) At proximal end

(1 mark)

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ii) At distal end

(1 mark)

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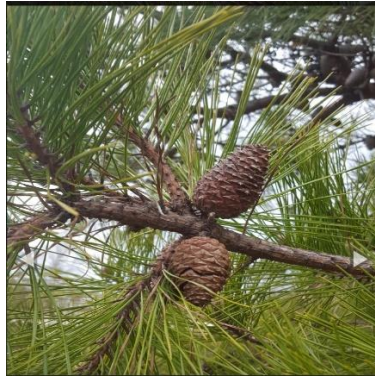
d) Give two functions of synovial fluid

(2 marks)

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4. The photograph below shows a plant. Study it.



a) Name the sub division to which the plant belongs (1 mark)

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b) Using observable features only, give two reasons for your answer in (a) above (2 marks)

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c) Give three economic importance of the plant in its habitat (3 marks)

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d) Based on locomotory and body covering structures, give two differences between members of class Aves and Pisces (2 marks)

Structure	Aves	Pisces
Locomotory		
Body covering		



5. The table below shows time taken by blue litmus paper clipped on the upper surfaces of a leaf of a potted plant to completely turn pink at different altitudes

Altitude (meters above sea level)	1000	1230	1500	1670
Time taken in minutes	3.0	2.4	1.7	1.2

- a) Account for the time taken by the blue litmus to completely turn pink as altitude increases

(3 marks)

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- b) Explain how glossy leaf surface affects the rate of transpiration

(3 marks)

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- c) Give two reasons why transpiration is important to plants

(2 marks)

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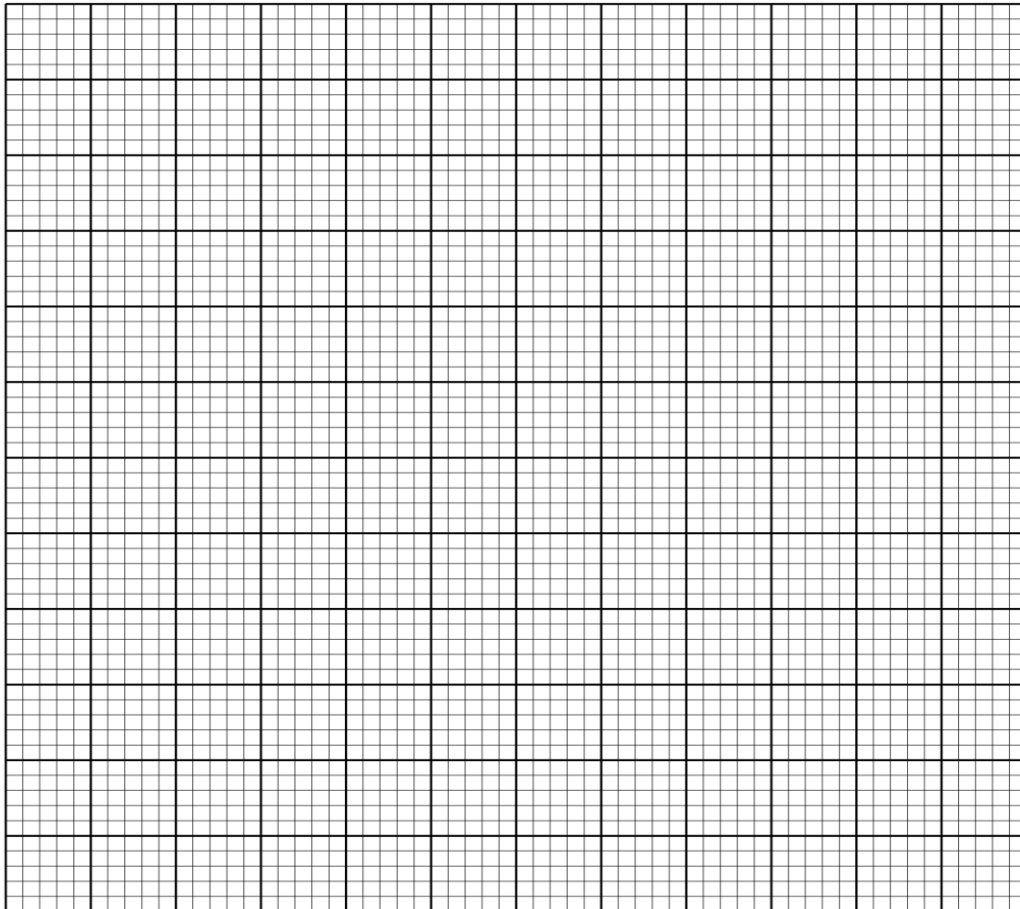
SECTION B (40 MARKS)

6. The table below shows the amount of lactic acid formed per unit time in 100cm^3 of blood in a healthy human being during vigorous physical exercise

Time in minutes	0	2	4	6	8	10	12	14	16
Amount of lactic acid formed (100cm^3 of blood)	0.6	0.8	3.8	6.0	8.4	7.2	6.0	5.0	3.2

- a) Plot a graph of amount of lactic acid formed against time.

(6 marks)



- b) Account for the amount of lactic acid formed between

- i) 0 minute – 8 minutes

(3 marks)

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ii) 10 minutes- 16 minutes (3 marks)

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c) Give two effects of lactic acid in the body (2 marks)

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d) State two ways of eliminating lactic acid from the body tissues (2 marks)

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e) The amount of blood flowing to the skeletal muscles increases during vigorous physical exercise. Explain (4 marks)

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7. a) Discuss adaptations of animal dispersed fruits and seeds (8 marks)

b) Discuss any two modes of asexual reproduction (12 marks)

8. a) Describe process of nerve impulse transmission across a synapse (6 marks)

b) Discuss functions of various parts of human brain (14 marks)



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