

MASENO SCHOOL

JULY/AUGUST MOCK - 2024

231/2 BIOLOGY Paper 2 (Theory)



Name Index Number.....

Class Date Signature.....

Instructions to candidates

- Write your name and index number in the spaces provided above.
- Sign and write the date of examination 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 12 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 all 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	
	7/8	20	
Total score		80	

2
SECTION A (40 marks)

*Answer **all** questions in this section*

1. In a certain species of rhododendron plant, the flower color is either red, white or red with white patches.

a) Identify the type of dominance shown by the rhododendron plant (1 mark)

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b) Using letter **R** to represent the gene for red flower and **W** to represent the gene for white flower, work out the phenotypic ratio when red flowered plant was crossed with a plant having flower with red and white patches (5 marks)

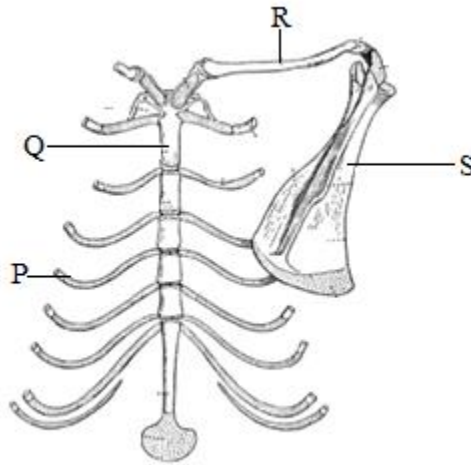
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c) Name two fields where knowledge of genetic engineering has been applied (2 marks)

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2. The photograph below shows part of skeleton system of a chordate. Examine it



a) Name the bones labeled Q and R

Q..... (1 mark)

R..... (1 mark)

b) Name the two organs protected by bones P and Q (2 marks)

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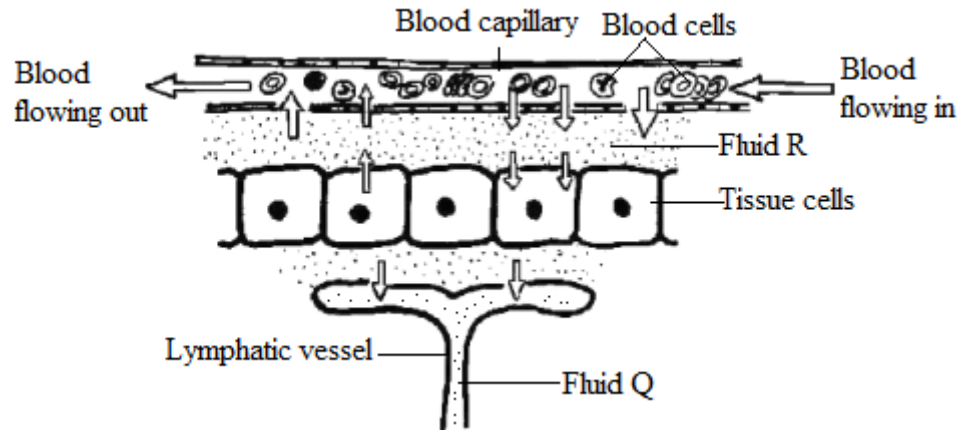
c) Describe the role of bones P in breathing (3 marks)

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d) Give one adaptation of bone S (1 mark)

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3. The diagram below illustrates a section of circulatory system. Study it



a) Name the process that leads to formation of the fluid labeled R (1 mark)

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b) Describe how the process named in (a) above occurs (3 marks)

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c) Name one blood cell that is present in fluid R (1 mark)

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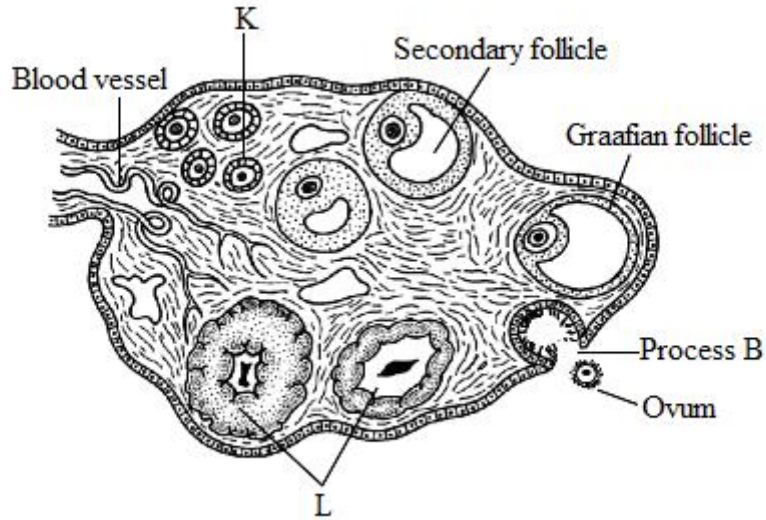
d) Give two adaptations of capillaries to the process named in (a) above (2 marks)

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e) Identify fluid labeled Q (1 mark)

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4. The diagram below illustrates transverse section of a human ovary and changes that occurs within it. Examine it



- a) State two functions of ovaries in females (2 marks)

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- b) Identify the structures labeled K and L

K..... (1 mark)

L..... (1 mark)

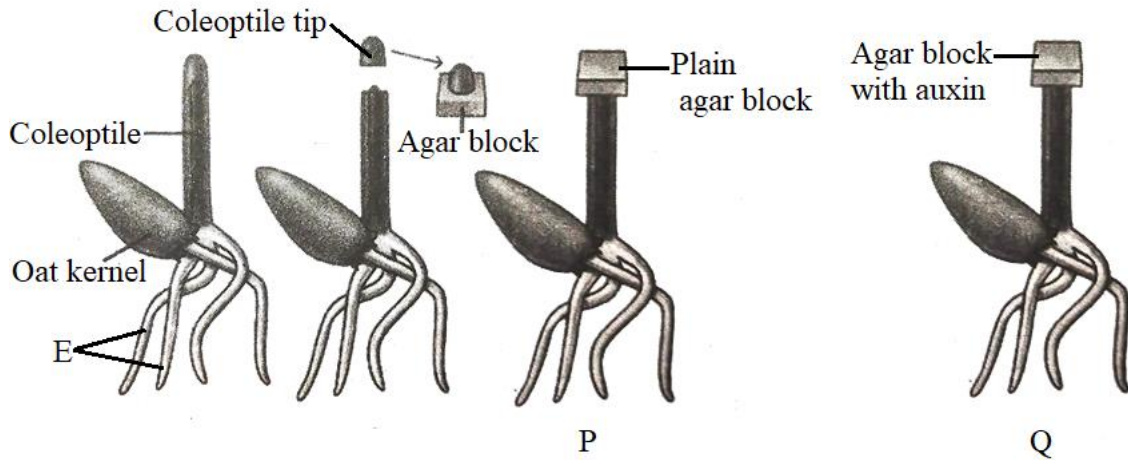
- c) Describe the role of structure L in pregnancy (2 marks)

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- d) Give two roles of hormone responsible for process B (2 marks)

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5. To investigate a certain response in oak seedlings, a group of Maseno School students decapitated two seedlings and replaced the coleoptiles with agar blocks as shown below. The set ups were left for 48 hours.



a) Account for observation made in seedlings P and Q

P

(3 marks)

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Q

(3 marks)

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b) Explain the role of structures E in nutrition after germination

(2 marks)

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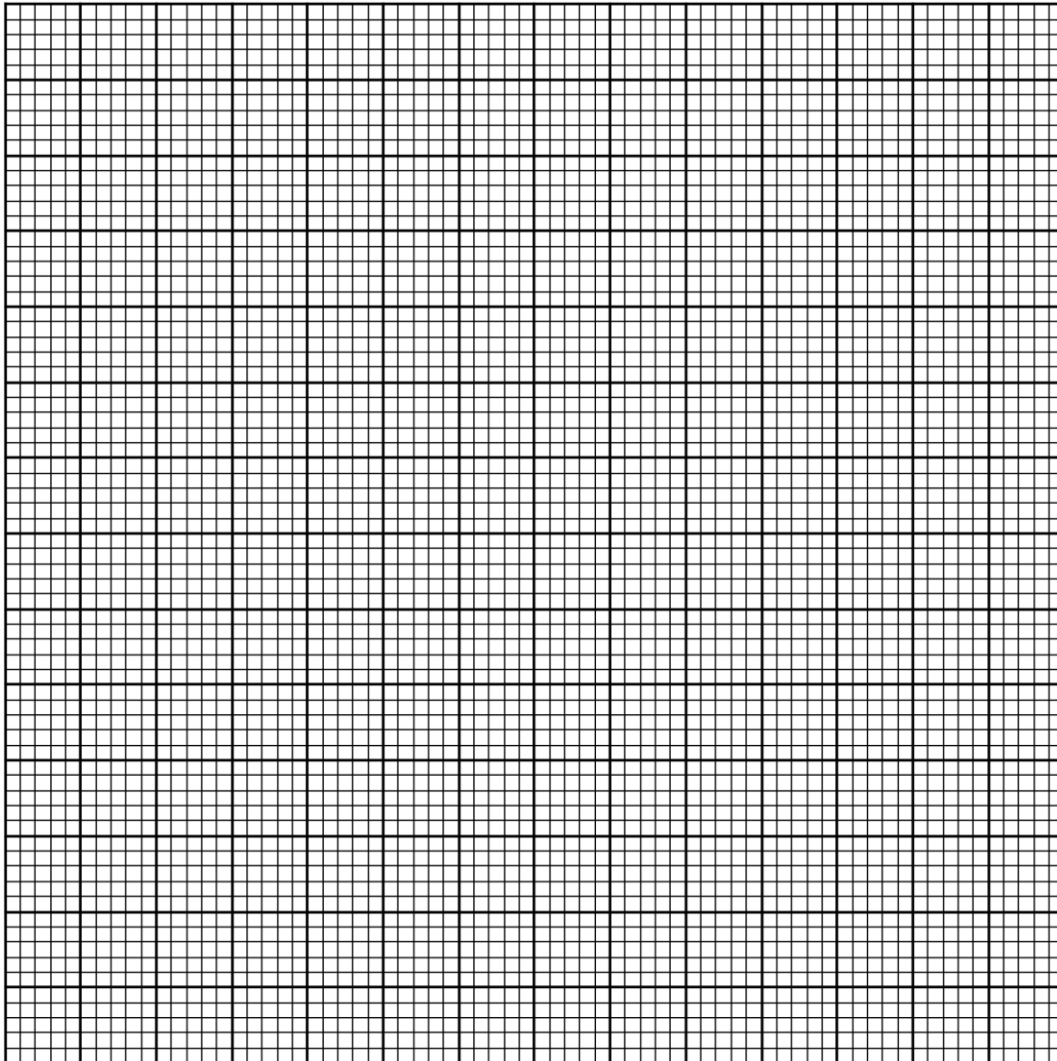
SECTION B (40 marks)

Answer question 6 (**compulsory**) and either question 7 or 8 in the space provided after question eight

6. In an experiment to investigate the rate of transpiration, two potted terrestrial seedlings of the same age but different habitats and were subjected to increasing concentration of carbon (IV) oxide. The data below was obtained

Carbon (IV) concentration (ppm)		10	15	20	25	30	35	40	45	50
Rate of transpiration (ml/min)	G	1.0	1.5	2.0	2.8	3.8	5.0	5.2	5.2	5.2
	H	2.0	3.0	3.6	4.6	5.6	6.8	7.5	7.5	7.5

- a) On the same axis, plot graphs of transpiration rate in plants G and H against carbon (IV) oxide concentration (8 marks)



b) At what carbon (IV) oxide concentration was the rate of transpiration 4.2 ml/min in plant G?

(1 mark)

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c) Identify the habitat of plants G and H

i) G

(1 mark)

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ii) H

(1 mark)

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d) Account for the difference in the rate of transpiration between plants G and H

(3 marks)

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e) Account for the rate of transpiration in the two plants between

i) 10ppm to 40ppm of carbon (IV) oxide

(3 marks)

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ii) 40ppm to 50ppm of carbon (IV) oxide concentration

(3 marks)

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