

NAME:..... ADM.NO.....

SIGNATURE..... DATE.....

231/2
BIOLOGY
PAPER 2, 2017.

**BRILLIANT KENYA CERTIFICATE OF SECONDARY EDUCATION
PREPARATORY EXAMINATION**

INSTRUCTIONS

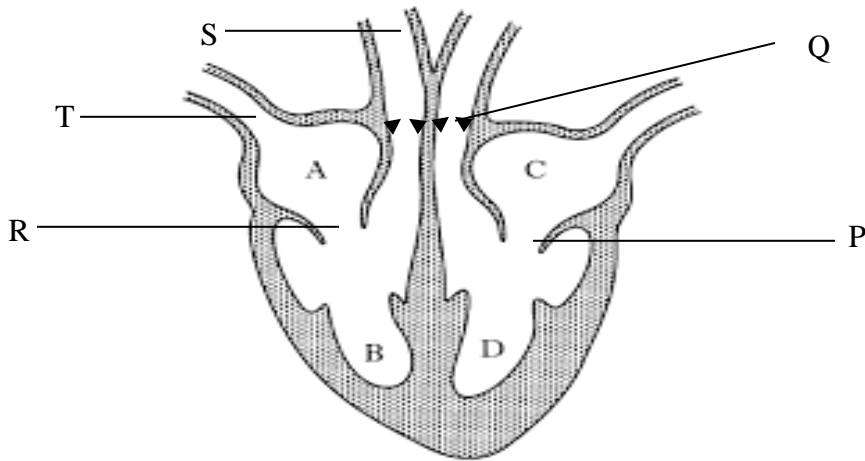
1. Answer all questions in the spaces provided.
2. You may be penalized for misspelling **TECHNICAL TERMS** in this paper.
3. Check through the paper to ensure all questions are printed.
4. This paper has **Two** Sections. Answer **all** questions in Section A.
5. Answer **Question 6 (COMPULSORY QUESTION)** in Section B and choose one question between Question 7 and 8.

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QUESTION	MAXIMUM SCORE	STUDENT'S SCORE
<u>SECTION A</u>	8	
1		
2	8	
3	8	
4	8	
5	8	
<u>SECTION B</u>	20	
6		
7	20	
8	20	

SECTION A (Answer all questions in this section)

1. Study the diagram below and answer the questions that follow:



a) Explain how the part labeled D is adapted to perform its functions compared to the part labeled B (4 Marks)

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b) Name the parts labeled (2 Marks)

P.....

Q.....

R.....

S.....

c) State any **two** structural differences between the part labeled S and T (2 Marks)

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2. While on an educational trip at Lake Victoria, a student observed a living organism and classified it as shown below:

- Kingdom:** Animalia
- Phylum:** Anthropoda
- Class:** Crustacea

a) Outline **two** characteristics which she used to classify the organism into Class Crustacea
(2 Marks)

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b) Identify **one** mistake in her classification
(1 Mark)

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c) Give **five** characteristics which she might have observed before concluding that the organism was a living organism
(5 Marks)

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3. Study the diagram below and use it to answer the questions that follow:



a) Which was being investigated?
(1 Mark)

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b) What is the importance of the sodium hydroxide (NaOH) pellets?
(1 Mark)

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c) Before setting up the experiment, the potted plant was kept in darkness for 6 hours. It was then exposed to sunlight for 4 hours and a starch test carried out on Leaf Q and Leaf P.

- i) Why was the potted plant kept in darkness for 6 hours? (1 Mark)

- ii) Predict the results of the starch test in: (2 Marks)
Leaf P.....

Leaf Q.....

- iii) Give a reason for your answer in ii) above (2 Marks)
Leaf P.....

Leaf Q.....

- iv) What was the importance of carrying out a starch test on Leaf Q? (1 Mark)

4. Premature baldness is a gene which is linked on the Y chromosome in human beings.
- a) Using Y^B to represent the gene for premature baldness, predict the probability of a couple in which the father has premature baldness getting a son with premature baldness. Show your working. (5 Marks)

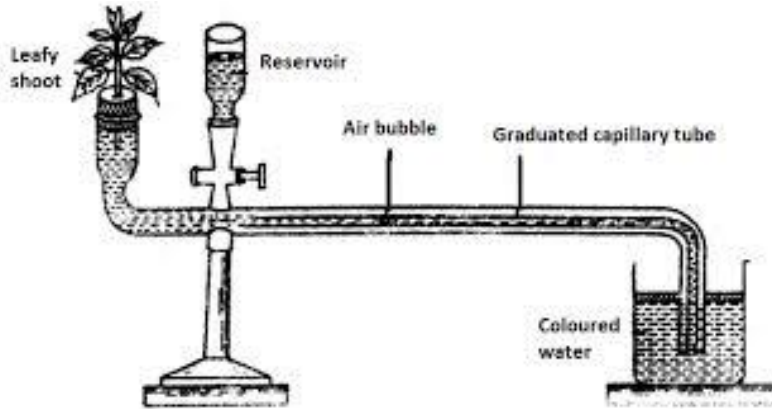
b) Explain why many sex linked characteristics occur in males. (2 Marks)

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c) Define 'Mutation' (1 Mark)

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5. Study the diagram below and use it to answer the questions that follow;



a) What is the name given to the instrument shown above (1 Mark)

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b) Which process is being investigated by the instrument shown above (1 Mark)

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c) State **three** precautions which should be considered when setting up the instrument shown above (3 Marks)

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d) Explain any **three** environmental factor which affect the process identified in b) above (3 Marks)

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SECTION B: (Answer Question 6- COMPUSORY QUESTION and choose one question between question 7 and 8)

6. During germination and growth of a cereal, the dry weight of endosperm, the embryo and total dry weight were determined at two day interval. The results are shown in the table below:

Time after planting (days)	Dry weight of endosperm(mg)	Dry weight of embryo (mg)	Total dry weight (mg)
0	43	2	45
2	40	2	42
4	33	7	40
6	20	17	37
8	10	25	35
10	6	33	39

a) using the axes provided in the next page, draw graphs of dry weight of endosperm, dry weight of embryo and the total dry weight against time. (8 marks)

b)What was the total dry weight on day 5? (1 mark)

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c) Account for: (6 marks)

i) decrease in dry weight of endosperm from day 0 to 10

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ii) Increase in dry weight of embryo from day 0 to 10

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iii) Decrease in total dry weight from day 0 to 8

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d. State factors that cause seed dormancy: (3 marks)

i) Within the seed

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ii) Outside the seed

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e. Give two characteristics of meristematic cells (2 marks)

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