

Name.....

Index No. ....

School .....

**231/2**  
**BIOLOGY**  
**PAPER 2**  
**(THEORY)**  
**JULY / AUGUST**  
**2 HOURS**

**TRANS-NZOIA DISTRICT MOCK EXAMINATION-2007**

Kenya Certificate of Secondary Education (K.C.S.E)

**231/2**  
**BIOLOGY**  
**PAPER 2**  
**(THEORY)**  
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**INSTRUCTIONS TO CANDIDATES**

- This paper has 2 sections: A and B.
- Answer all questions in section A in the spaces provided.
- In section B answer question 6 (Compulsory) and either question 7 or 8 in the space provided after the questions.

**FOR EXAMINER’S USE ONLY**

SECTION	QUESTION	MAX. SCORE	CAND. SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	TOTAL	80	

*This paper consists of 12 printed pages.  
 Candidates should check the question paper to ensure that all pages are printed as indicated  
 and no questions are missing*

**SECTION A**

1 a) Distinguish between open and closed circulatory systems. ( 2mks)

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b) What is the importance of pulmonary circulation? ( 1 mk)

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c) State three reason why plants are able to live without a circulatory system of the type found in higher animals. (3mks)

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d) State two ways by which leucocytes protect the body against infections. ( 2mks)

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2. a) Fill in the missing taxons in the table below. ( 6mks)

<b>ORGANISM</b>	<b>PHYLUM / DIVISION</b>	<b>CLASS</b>
i) Centipede		
ii) lizard		
iii) Hibiscus plant		

b) Name two permanent structures used for locomotion in kingdom protocista. For each structure give an example of the organisms that possesses it. ( 2mks)

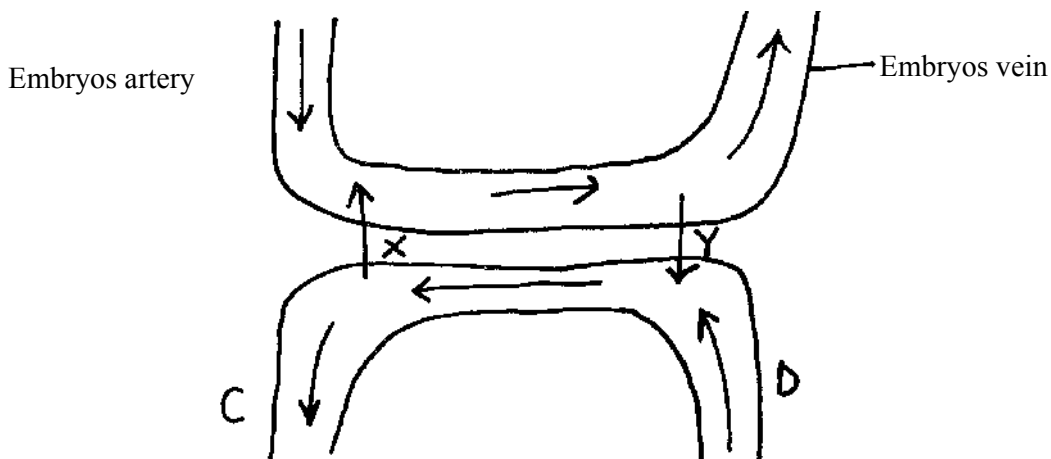
<b>Structure</b>	<b>Organism</b>
i) F	
ii)	

3. In a national park, it was observed that antelopes and zebras fed on grass, lions and leopards fed on grazers while hyenas and vultures fed on carcasses of lions and leopards respectively.
- a) Draw a food web for the ecosystem (4mks)

- b) State the trophic level of: (2mks)
- i) Leopards .....
- ii) Vultures.....

- c) State two adaptations, the leopards have to apprehend their prey. (2mks)
- .....
- .....
- .....

4. The figure below shows the relationship between the embryo and the mothers blood circulatory systems. Study it and answer the questions that follow.



- a) Name the blood vessel: (2mks)
- i) C.....
- ii) D.....

b) Name two substances that move in the direction represented by arrows X and Y. ( 4mks)

i) X 1.....  
2.....

ii) Y. 1.....  
2.....

c) i) What name is given to the type of blood flow illustrated in the diagram? ( 1mk)  
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ii) Suggest a reason why this method of blood flow is advantageous. ( 1mk)  
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5. A maize plant that was tall was crossed with another maize plant that was dwarf. The offspring's were of medium height.

a) Work out the genotype of the F1 offspring's ( 5mks)  
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b) i) Work out the phenotypic ratio of the F2 generation. ( 4mks)  
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ii) Name the type of inheritance verified by the F2 phenotypic ratio above ( 1mk)  
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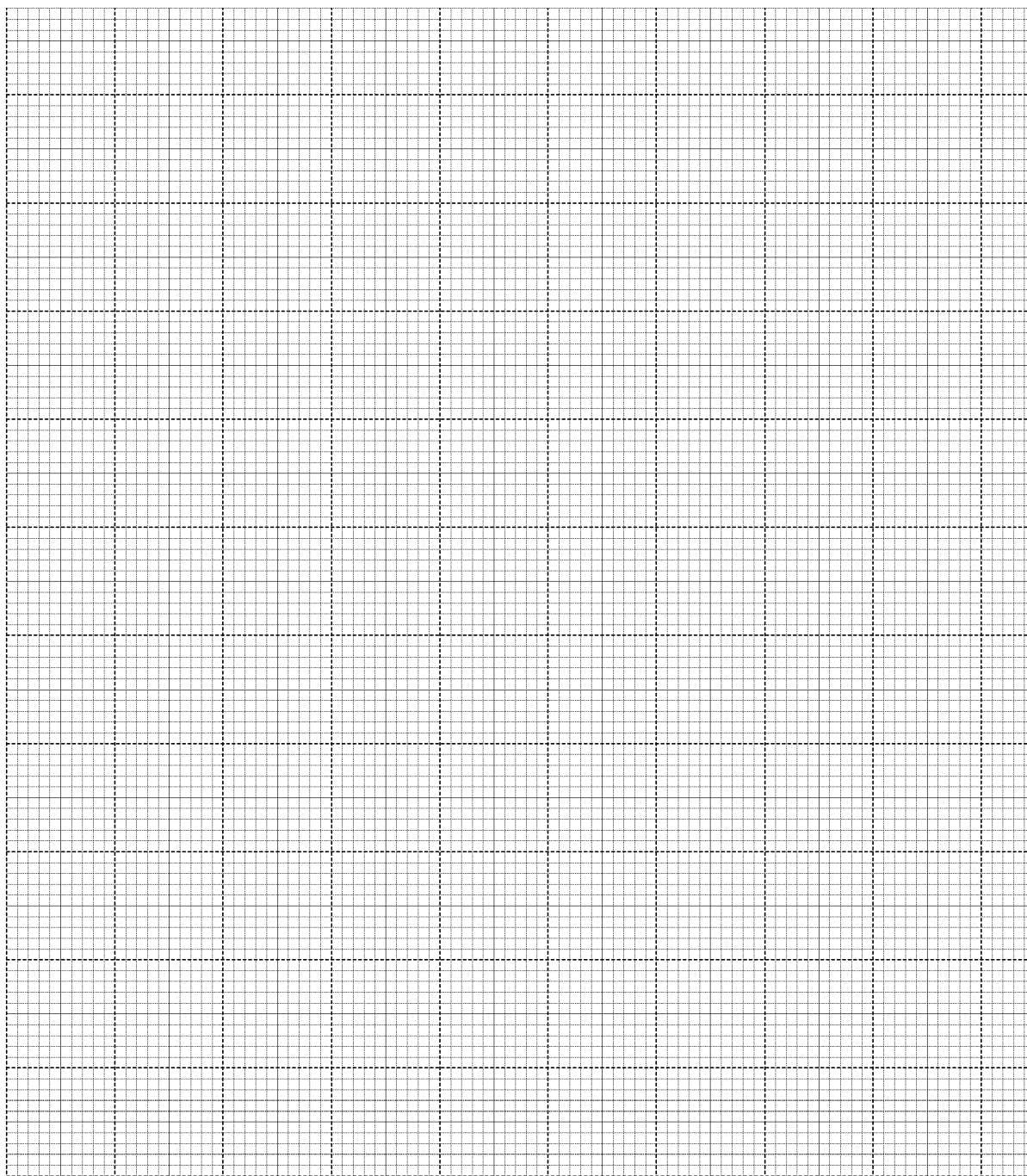
**SECTION B ( 40mks)**

6. Nine batches each containing 50 bean seeds were placed separately in beakers containing moist cotton wool. Each beaker was placed in a water bath at different temperatures from each other. All other conditions were kept constant and same. After eight days the percentage germination of the beans in each batch was calculated and the results tabulated as shown below.

Temp °c	0	5	10	15	20	25	30	35	50
% germination	0	0	2	4	12	46	80	24	2

- a) Using a suitable scale, plot % germination against temperature on the graph paper provided.

( 6mks)



b) How was percentage germination determinant ( 1mk)

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c) Account for the percentage germination at:

i) 5°c (3mks)

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ii) 30° c ( 2mks)

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iii) 50°c ( 2mks)

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d) State two factors that would have been responsible for 20% germination failure at 30°c.

( 2mks)

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e) Some species of seeds fail to germinate after exposure to short periods of high temperature which another species of seeds will show a high germination percentage.

Explain.

( 4mks)

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7. a) With the aid of a diagram, explain double fertilization in flowering plants ( 15 mks)

b) State the changes that occur in the flowering plant after fertilization (5mks)

8. Describe how the mammalian skin is adapted to its functions. ( 20mks)

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