Name…… **Index No. …….**

School ……...

231/2
BIOLOGY
Paper 2
THEORY
July / August - 2007
Time: 2 Hours

HOMABAY/SUBA DISTRICT MOCK EXAMINATION-2007

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

231/2
BIOLOGY
Paper 2
THEORY
July / August - 2007
Time: 2 Hours

INSTRUCTION TO CANDIDATES

- This paper consists of two sections A and B.
- Answer all questions in section A
- Answer question 6 [compulsory] and any other one question [7 or 8] in the spaces provided after question 8 from section B

For Examiner's Use Only

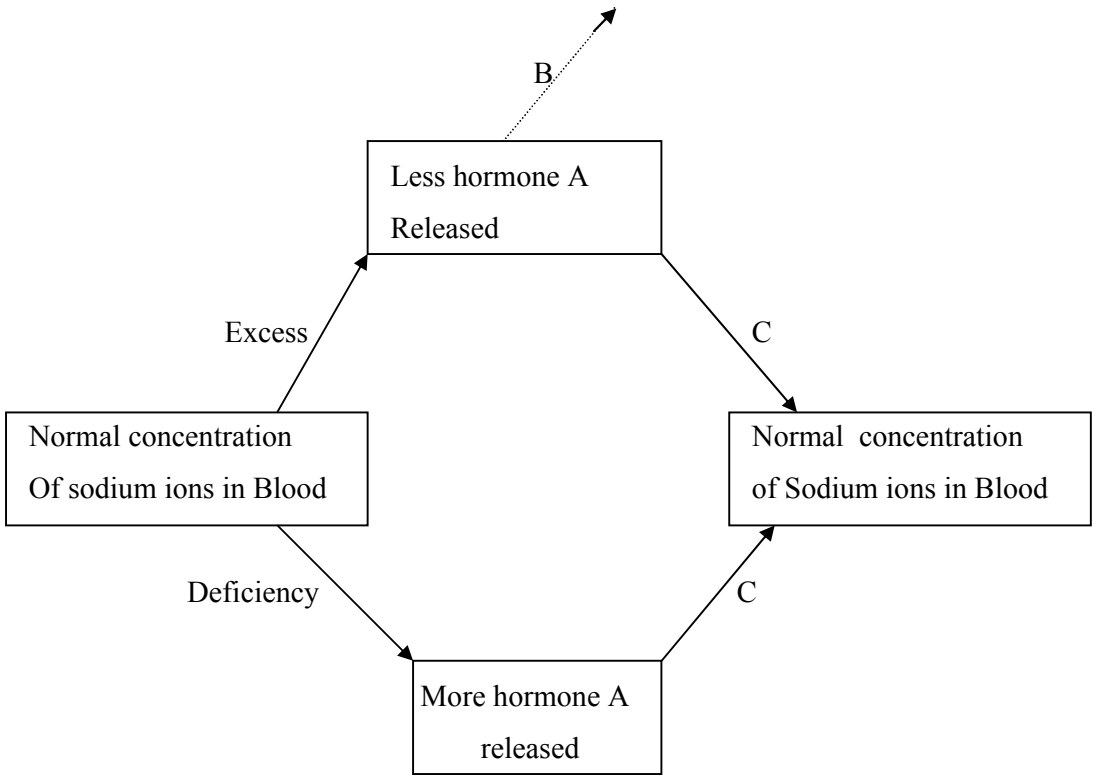
Section	Question	Max. Score	Candidates Score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	TOTAL SCORE	80	

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 [40 MARKS]

Answer all questions in this section

1. Study the homeostatic scheme below and use it to answer the questions that follow.



a) Identify the hormone labelled A. (1mk)

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b) Name the gland which releases hormone A. (1mk)

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c) Outline two major sites of action of hormone A. (2mks)

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d) Identify the feedback labelled C. (1mk)

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e) State the effect of the feedback labelled B in humans. (1mk)

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f) Name the self regulatory process represented by the above schematic diagram. (1mk)

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g) A person was found to pass out large volumes of dilute urine frequently. Name the disease the person was suffering from. (1mk)

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2. In an experiment a black mouse was mated with a brown mouse, all the springs were black. The offspring's grew and were allowed to mate with one another. The total number of F2 generation were 192.

a) Using the letters symbols B for genes for black and b for genes for brown, work out the genotypes of the F1 generation. (3mks)

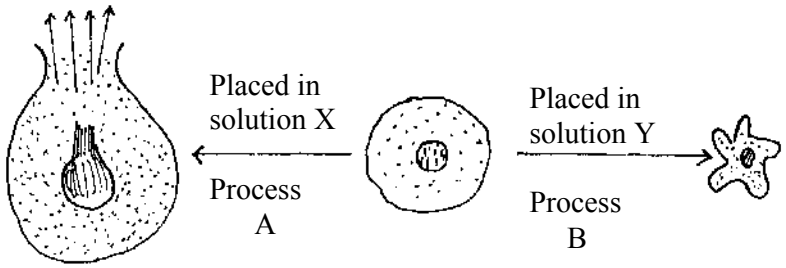
b) From the information above, work out the following for the F2 generation.

(i) Genotypic ratio (2mks)

(ii) Phenotypic ratio (1mk)

(iii) The total number of brown mice. (2mks)

3. The diagrams below illustrates the behaviour of Red Blood Cells when placed into two different solutions X and Y.



a) Suggest the nature of solutions X and Y. (2mks)

X …… Y ……

b) Name the processes A and B (2mks)

A …… B ……

c) what would happen to normal blood cells if they were placed in an isotonic solution. (1mk)

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d) Explain the mechanisms by which water moves from the soil into the root hair cell in plants (3mks)

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4. a) Outline the muscular movements in man that occur during the following breathing process.

(i) Inhalation (3mks)

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(ii) Exhalation (3mks)

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b) Give one reason why insect blood has a low capacity for carrying oxygen. (1mk)

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c) Name two other respiratory surfaces in amphibians apart from using lungs. (1mk)

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5. a) Explain the role of Genetic mixing in evolution. (2mks)

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b) The ability of some members of a species to survive depends on how fit they are. Explain the expression survival of the fittest. (3mks)

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c) State three limitations of using fossil records as an evidence of evolution. (3mks)

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SECTION B (40 MARKS)

Answer question 6 (compulsory) and any other one question (7 or 8) in the spaces provided after question 8

6. In an experiment, 900 viable seeds of a certain species were divided into groups of 100 seeds each. Each group of seeds were placed at different temperatures but same conditions of air and moisture. The percentage germination was determined after 10 days. The table below shows percentage germination at the various temperatures.

Temperature ^{0}C	0	5	10	15	20	25	30	35	40	45
% Germination	0	0	2	5	16	50	84	30	2	0

(a) Using a suitable scale, draw a graph of percentage germination against temperature on the graph paper provided below. (6mks)

b) Account for germination at

(i) 5^0C (3mks)

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(ii) 30^0C (3mks)

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(iii) 45^0C. (3mks)

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c) Explain the role played by each of the following factors in the germination of seeds.

(3mks)

(i) Water

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(ii) Air

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7. a) Describe how mammalian heart structure is adapted to its function. (15mks)

b) Describe the process of blood clotting in man when blood is exposed to air. (5mks)

8. Explain how:

a) Desert plants are adapted to their habitats. (12mks)

b) Hydrophytes are adapted to their habitat. (8mks)

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