
**KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS**

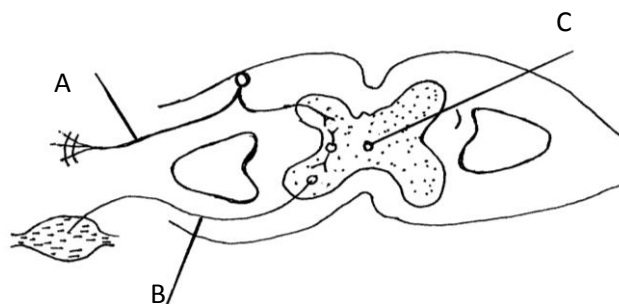
**BAHATI GIRLS HIGH SCHOOL
BIOLOGY THEORY
PAPER 2**

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**BAHATI GIRLS KCSE TRIAL
AND PRACTICE EXAM 2016
Paper 2**

SECTION A: (40MARKS)

1.
 - a) State three structural differences between arteries and veins (3mks)
 - b) List two factors that aid in blood flow through the veins (2mks)
 - c) Name the proteins in the blood which are responsible for determining the blood group of person (2mks)
 - d) In a certain person, blood took long time to clot after a cut. What vitamin deficiency was the person likely to have been suffering from? (1mk)
2.
 - a) What is carbon dioxide fixation in photosynthesis? (3mks)
 - b) Explain how oxygen is formed in the process of photosynthesis (4mks)
 - c) Other than carbon (IV) oxide, name another raw material for photosynthesis (1mk)
3. Below is a cross section of the human spinal cord.



- a) Name the parts labeled A and B (2mks)
 - b) State the function of the part labeled C (1mk)
 - c) Describe the reflex arc when a bare footed man steps on a sharp pin (5mks)
4.
 - a) Name two disorders in humans caused by gene mutations (2mks)
 - b) What is meant by the term allele? (1mk)
 - c) In a particular species of tropical beetle, the wings had either red or orange marks. A cross between a red marked beetle with orange marked beetle produces offsprings with yellow marks only. When F1 offsprings were selfed, they produced F2 generation in the ratio of 1 red : 2 yellow : 1 orange
 - i) Explain the absence of red and orange marks in F1 offspring's (1mk)
 - ii) Using a punnet square, show how the F2 generation was crossed. (Use letters R for red marks and W for Orange marks) (4mks)
5.
 - a) Describe the three characteristics of a population (3mks)
 - b) The table below gives information about an aquarium community which is ecologically balanced.

| Type of organism | Weight in grams |
|------------------|-----------------|
| Insect larvae | 500g |
| Fishes | 1,200g |
| Water Plants | 5000g |
| Bacteria | 10g |

- i) What do you understand by the term ecological balanced? (1mk)
- ii) Construct a pyramid of biomass from the above data (3mks)
- iii) Briefly describe the shape of the pyramid of biomass (1mk)

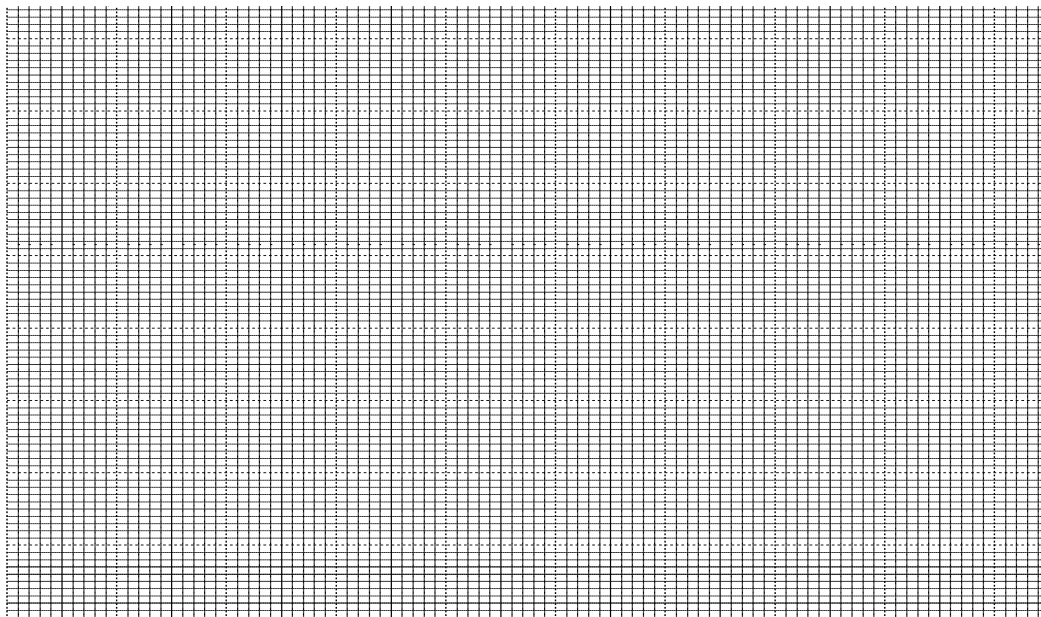
SECTION B (40 MARKS)

question 8

6. The table below shows the rate of enzyme activity at different pH values.

| pH | Rate of Product formation (mg/hr) |
|----|-----------------------------------|
| 1 | 8.0 |
| 2 | 10.0 |
| 3 | 10.0 |
| 4 | 6.0 |
| 5 | 3.3 |
| 6 | 2.0 |
| 7 | 1.0 |
| 8 | 0.3 |
| 9 | 0.0 |
| 10 | 0.0 |

a) Using a suitable scale, draw a graph of the rate of product formation against pH (6mks)



- b) Account for the rate of product formation between
 - i) pH 1 and 3 (2mks)
 - ii) pH 5 and 8 (2ms)
 - iii) pH 9 and 10 (2mks)
 - c) What is the optimum pH value for this enzyme (1mk)
 - d) Suppose this enzyme is a digestive in what part of the alimentary canal would it be found (1mk)
 - i) Give a reason for your answer (2mks)
 - e) Apart from the pH, state four other factors that may affect the rate of enzyme activities (4mks)
7. a) Describe how insect pollinated flowers are adapted to pollination (10mks)
- b) Explain how seeds and fruits are adapted to wind and animal dispersal (10mks)
8. Explain how a finned fish is adapted to locomotion in water (20mks)