KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

SACHO HIGH SCHOOL

BIOLOGY THEORY

PAPER 2

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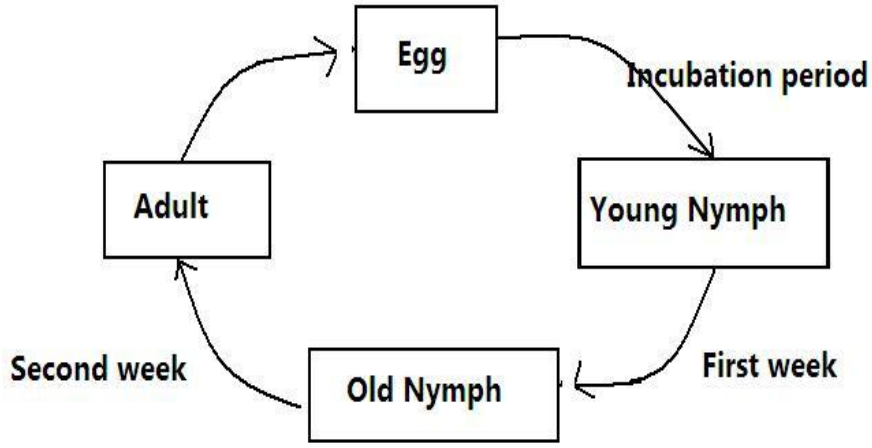
SACHO HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

Paper 2

SECTION A (40 MARKS)

1. The diagram below shows a life cycle of a cockroach



(a) **Name** the hormone that would be at high concentration during the first and second week and their functions.

(i) First week (2mks)

Hormone

Function

(ii) Second week (2mks)

Hormone

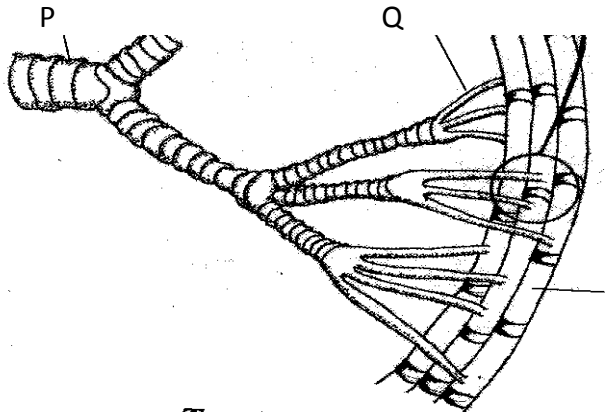
Function

(b) **Name** the structure that produces hormone named in a (ii) above (1mk)

c) Name the process represented by the life cycle above (1mk)

d) State two importance for the process named in (c) above (2mks)

2. The diagram below represents part of a geasous system in a grasshopper.



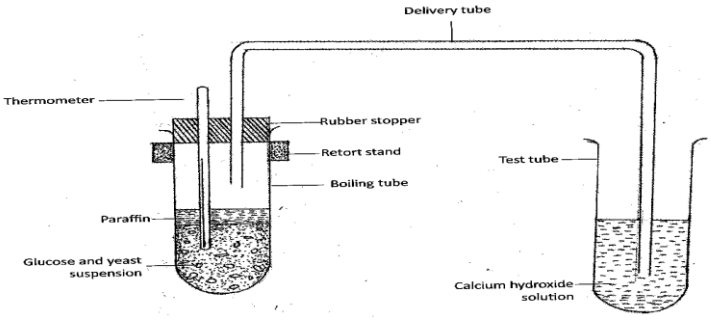
a) Name the structures labeled P and Q

b) State the function of the structure labeled P (1mk)

c) Describe the path taken by carbon (IV) oxide from the tissues of the insect the atmosphere (3mks)

d) How is the structure labeled Q adapted to its functions (2mks)

3. The set up below illustrates an experiment to demonstrate a certain biological process, before the addition of the yeast suspension the glucose solution was first boiled and then cooled at 40^{o}C.



a) What was the aim of the experiment? (1mk)

b) What observations would you make in the tubes a few minutes after the experiment begun (2mks)

c) Explain the observations made in (b) above (2mks)

d) Why was glucose solution boiled before cooling at 40^{o}C (1mk)

e) How can you set up a control experiment for the above (1mk)

4. The following are short messages (sms) on cell phone communication between Mrs. Mkenzie and her husband. They can be used as analogies of gene mutation

	Intentended message	Actual message
1.	I want a drive	I want a driver
2.	Yesterday was my shopping day	Yesterday was my hopping day
3	My skirt was stolen	My shirt was stolen
4	Tommorrow I will be visiting my team	Tommorow I will be visitng my mate

a) For each of these messages identify the type of gene mutation illustrated (4mks)

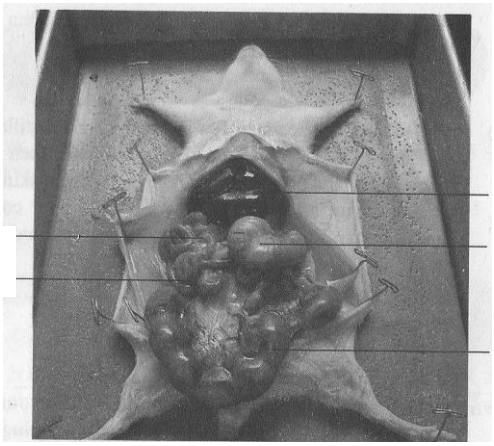
b) State one example of chromosomal mutation that lead to

i) Change in chromosome structure (1mk)

ii) Change in chromosomal number (1mk)

c) Explain why genetic counseling is termed as one practical application of genetics (2mks)

5. The following is a photograph of s dissected mammal. Study the photograph and answer the questions that follows



a) Name the structures labeled R,S and T (3mks)

b) On the photograph, label and name the site of production of vitamin K (1mk)

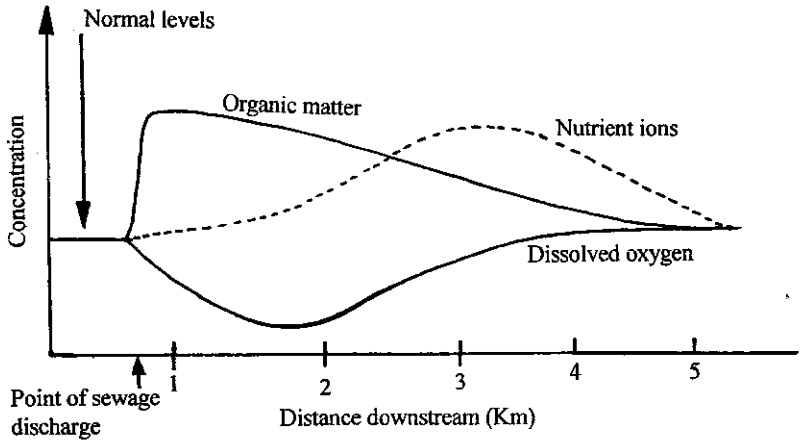
c) State one function of the following parts (2mks)

d) i) State the sex of the dissected mammal (1mk)

SECTION B (40 MARKS)

Answer question 6(compulsory) then choose any between question 7 and 8

6. The figure below shows the changes in the concentration of various substances in a river following the discharge of untreated sewage into it. Study it and answer the questions that follow



a) Account for the changes in the concentration of:

i) Organic matter (3mks)

ii) Nutrient ions (2mks)

iii) Dissolved oxygen (4mks)

b) Describe the changes you would expect to observe with respect to:

i) Fish population (3mks)

ii) Water plants and photosynthetic algae (4mks)

c) State four ways of controlling the type of pollution illustratted above (4mks)

7. Describe how the following types of plants are adapted to their habitats:

a) Mesophytes (10mks)

b) Halophytes (5mks)

c) Hydrophytes (5mks)

8. Discuss the adaptations of the human eye to its functions (20mks)