

Name:.....Index No.:

Candidate's Signature:

Date:

231/2
BIOLOGY
Paper 2
JUNE 2013
Time: 2 hours

KASSU JOINT EVALUATION EXAMINATION

Kenya Certificate of Secondary Education

Paper 2

BIOLOGY

Instructions to Candidates

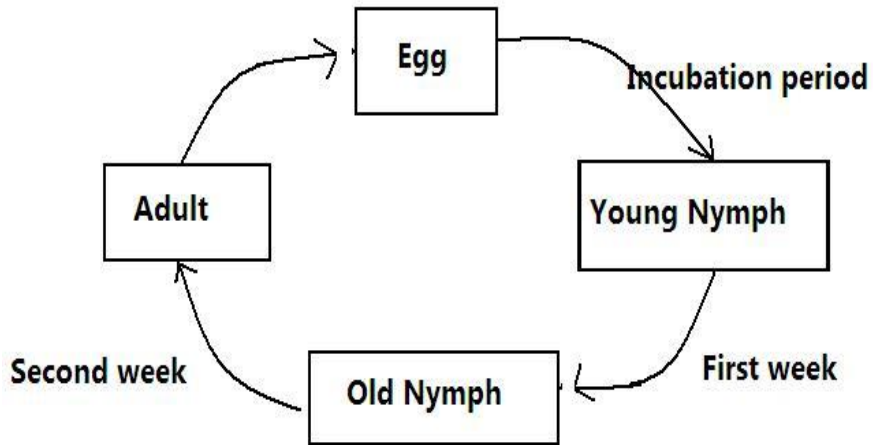
- ❖ Write your name and index number in the spaces provided above.
- ❖ Sign and write the date of the examination paper.
- ❖ Answer **ALL** the questions in the spaces provided in the question paper.
- ❖ ALL working **MUST** be clearly shown where necessary.
- ❖ Mathematical tables and silent electronic calculators may be used.

CANDIDATE'S SCORE

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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

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Function

.....

(ii) Second week (2mks)

Hormone

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Function

.....

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

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

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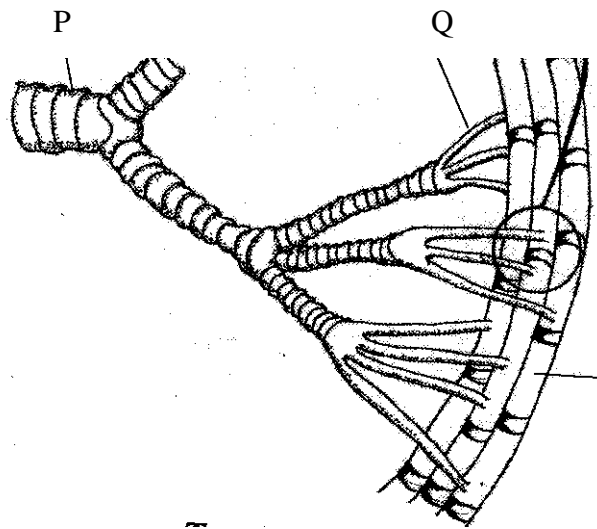
d) State two importance for the process named in (c) above (2mks)

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



a) Name the structures labeled P and Q

P.....(1mk)

Q.....(1mk)

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

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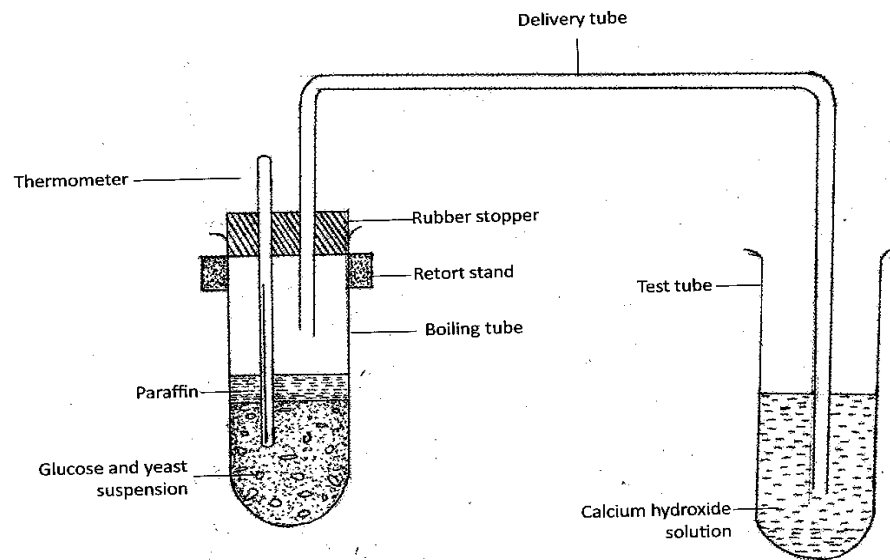
c) Describe the path taken by carbon (IV) oxide from the tissues of the insect the atmosphere (3mks)

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

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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°C.



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

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

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

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d) Why was glucose solution boiled before cooling at 40°C (1mk)

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

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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

	Intented 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	Tommorrow I will be visitng my mate

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

- 1.....
 2.....
 3.....
 4.....

b) State one example of chromosomal mutation that lead to

i) Change in chromosome structure (1mk)

.....

ii) Change in chromosomal number (1mk)

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

(2mks)

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



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

R.....
 S.....
 T.....

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

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

S.....

 T.....

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

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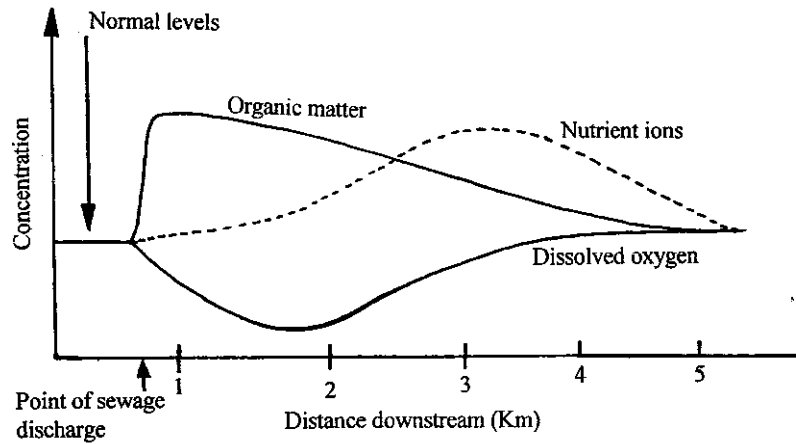
ii) Give a reason for your answer in d (i) above (1mk)

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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)

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ii) Nutrient ions (2mks)

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iii) Dissolved oxygen (4mks)

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

i) Fish population (3mks)

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ii) Water plants and photosynthetic algae (4mks)

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

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- 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)

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