

Name.....

Index No.....

School.....

Candidates Signature.....

Date:

231/2

BIOLOGY

Paper 2(Theory)

July / August 2011

Time: 2 Hours

LOWER YATTA DISTRICT JOINT EVALUATION EXAM- 2011

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

BIOLOGY

Paper 2

(Theory)

Time: 2 Hours

Instructions to candidates

- Answer **all** questions in section A by filling in the spaces provided.
- In Section B, Answer Question 6 (Compulsory Question) and any other **One** Question from the remaining two Questions.
(i.e. 7 or 8)

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Section	Question	Maximum score	Candidates score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	Total Score	80	

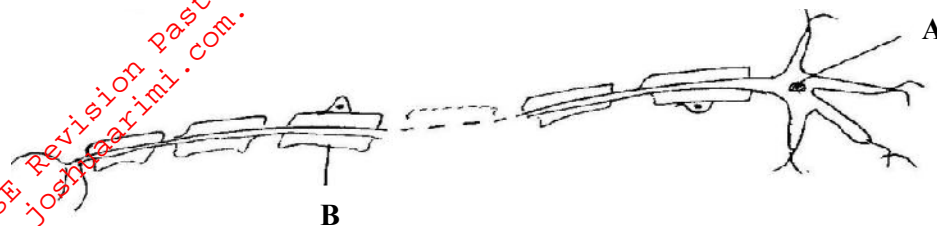
This paper consists of 8 printed pages.

Candidates should check to ensure that all pages are printed as indicated and no questions are missing

SECTION A (40 MARKS)

Answer ALL questions in this section in the space provided below.

1. The diagram below shows a neurone.



a) i) Identify the neurone. (1 Mark)

.....

ii) Give a reason for your answer. (1 Mark)

.....

.....

b) Name parts A and B. (2 Marks)

A

B

c) On the diagram show the direction of impulse. (1 Mark)

d) State **three** differences between nervous and endocrine forms of communication. (3 Marks)

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2. Explain the following observations.

a) Some plants have stomatal rhythm reversed. (1 Mark)

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b) One feels cold when skin surface is smeared with ethanol. (3 Marks)

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c) Red blood cells put in distilled water haemolyse. (2 Marks)

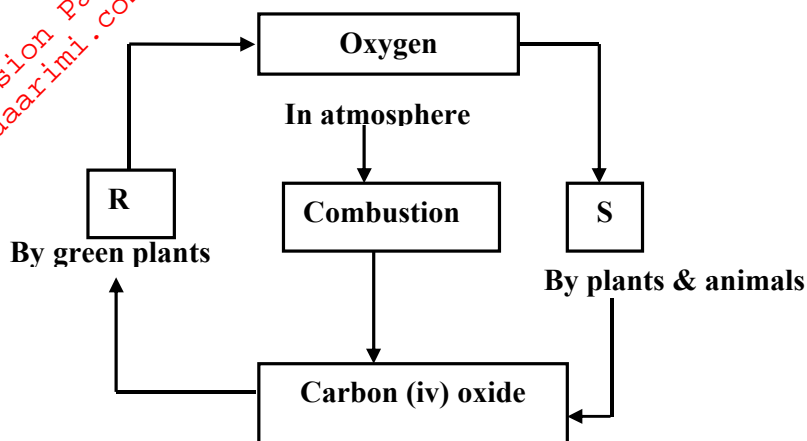
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d) More branches sprout if shoot tip of a plant is removed. (2 Marks)

.....

3. The flow diagram below shows recycling of oxygen and carbon (iv) oxide in nature.



a) Name process shown by R and S. (2 Marks)

R

S

b) Write a word equation to show processes R and S.

R (1 Mark)

.....

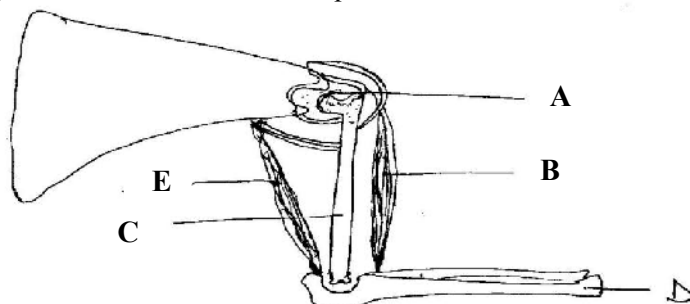
S (1 Mark)

.....

c) State how submergent aquatic plants are adapted for photosynthesis. (4 Marks)

.....

4. Study the diagram below and answer the questions that follow.



a) i) Name part A. (1 Mark)

.....

ii) State its function.

(1 Mark)

.....
.....

b) How is bone D adapted to function?

(2 Marks)

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.....
.....

c) Explain how B and E bring about movement of the forearm.

(2 Marks)

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.....
.....

d) Bone C is long and hollow. Give a reason.

(1 Mark)

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.....

e) Name the structure that joins a muscle to a bone.

(1 Mark)

.....

5. a) What is test cross?

(2 Marks)

.....
.....

b) A farmer planted brown bean seeds but after harvesting, she obtained 112kg out of which 8kg were brown seeds and rest white.

i) Account for occurrence of white seeds to the harvest.

(1 Mark)

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.....

ii) Using letter B to denote gene for bean colour, show how the phenotypes of the harvest were obtained.

(4 Marks)

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c) Suggest why farmers are advised not to plant harvested hybrid seeds.

(1 Mark)

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SECTION B (40 MARKS)

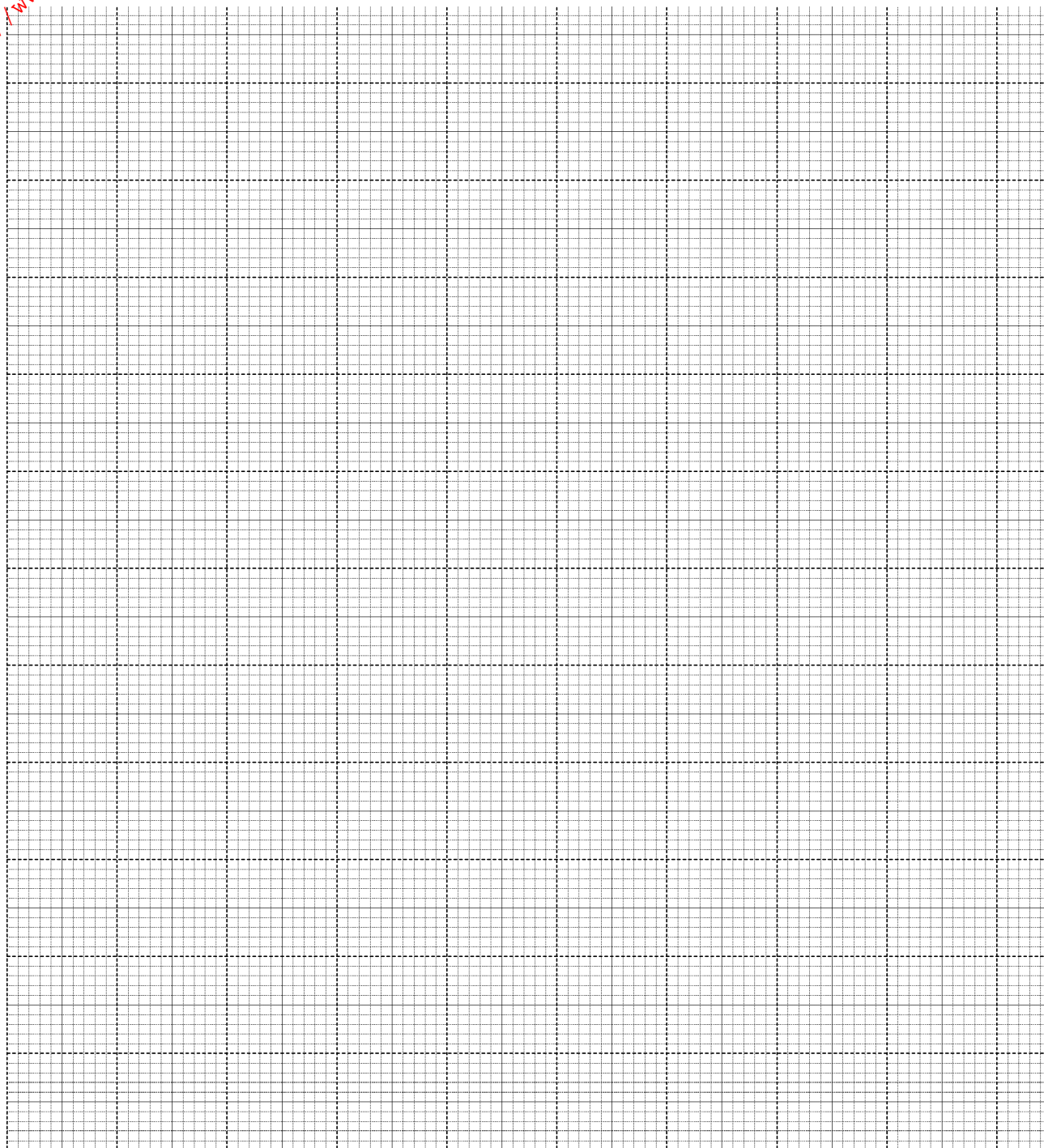
Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8.

6. In an experiment 1000 viable seeds of beans were divided into groups 100 seeds each. Each group of seeds was placed at different temperatures but same conditions of air and moisture. Percentage germination was determined after 7 days. The results are shown in the table below.

Temp °C	0	5	10	15	20	25	30	35	40	45
Percentage germination	0	0	2	5	16	50	84	30	2	0

a) Using suitable scale plot the results on a graph paper

(6 Marks)



b) Account for percentage germination at;

i) 5°C. (2 Marks)

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.....

ii) At 30°C. (2 Marks)

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.....

c) i) State the observation if acacia seeds were used instead of bean seeds. (1 Mark)

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.....

ii) Give a reason for your answer in (i) above. (2 Marks)

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d) Explain how percentage germination was determined. (4 Marks)

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e) State **two** internal causes of seed dormancy. (2 Marks)

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f) What is scarification? (1 Mark)

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7. Explain how seeds and fruits are adapted for dispersal. (20 Marks)

8. a) Describe how mammalian ear is adapted for hearing. (18 Marks)

b) State **two** functions of mammalian ear other than hearing. (2 Marks)

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