Name…… Index No. ……

School …….. Date……. …….

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231/2
BIOLOGY
PAPER 2
JULY / AUGUST 2012
Time: 2 Hours

KWANZA DISTRICT JOINT EVALUATION TEST - 2012

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

231/2
BIOLOGY
PAPER 2
JULY / AUGUST 2012
Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

- This Paper consists 2 sections A and B.
- Answer all questions in section A in the spaces provided
- In section B, answer questions 6 (compulsory) and either questions 7 or 8 in the spaces after questions 8..

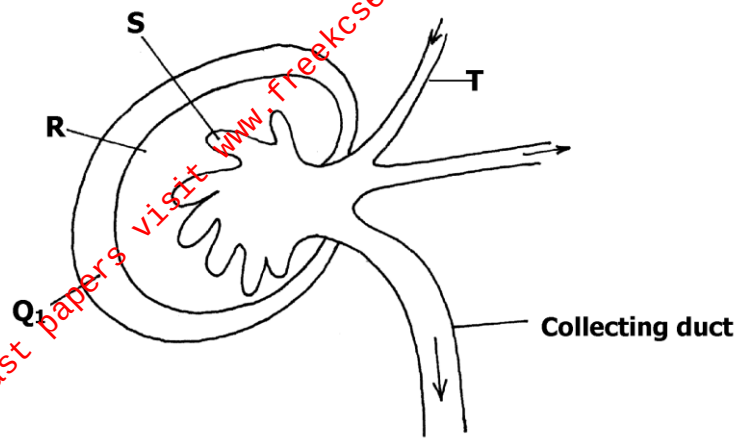
FOR EXAMINERS USE ONLY

SECTION	Questions	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 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

1. The diagram below is a longitudinal section of an organ in mammals



a) Name the organ (1mk)

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b) Identify the parts R and S (2mks)

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c) i) State two differences in the structure above found in the deserted- rat and fish (3mks)

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ii) Account for the difference stated above. (2mks)

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d) Name the gland associated with the secretion of aldorsterone hormone. (1mk)

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2. a) What is the economic importance of anaerobic respiration in industry. (3mks)

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b) Explain what happens in the two phases of aerobic respiration. (5mks)

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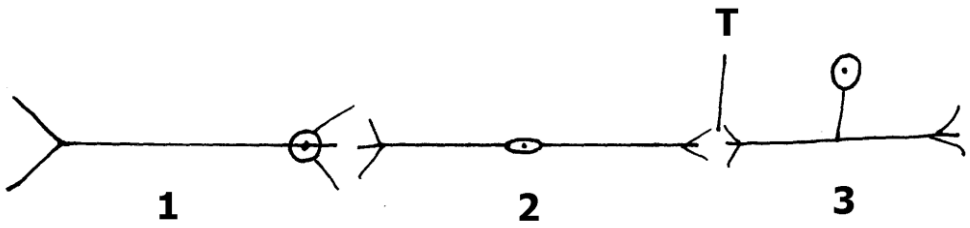
3. The diagram below shows three different types of neurons along a reflex arc.



a) Identify the Neuron labeled 1,2 and 3. (3mks)

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b) Using arrows show the direction of impulse transmission on the diagram. (1mk)

c) Name the part where the cell body of neurons 1 and 2 are located. (2mks)

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d) Describe the transmission of impulses across the part labeled T.

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4. In an experiment, a variety of garden peas have a smooth seed coat was crossed with a variety with a wrinkled seed coat. All the seeds obtained in the F_1, had a smooth seed coat
The F_1 generation was selfed. The total number of F_2 generation was 7324.

a) Using appropriate letter symbols in a punnet square, work out the genotypes of the F1 generation. (4mks)

b) From the information above, work out the following for the F_2 generation

(i) Genotypic ratio (2mks)

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(ii) Phenotypic ratio (1mk)

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(iii) Wrinkled number (1mk)

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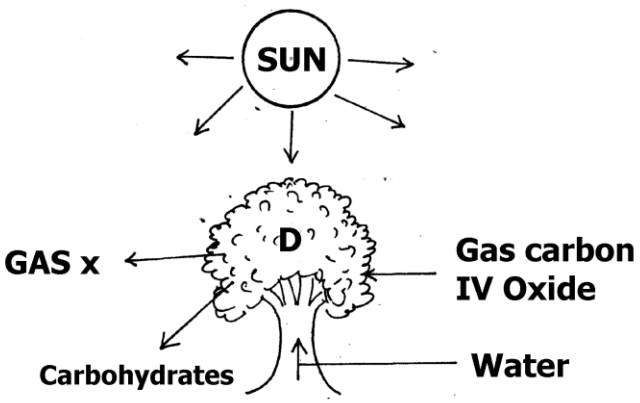
5. The diagram below illustrate the first stage in the energy flow in the ecosystem



a) Identify (i) organelles responsible for activity in D.

(i) in D (1mk)

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(ii) Gas X (1mk)

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b) Suggest the roles played by each of the following in the process illustrated above.

i) Light energy (1mk)

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ii) Water (1mk)

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iii) Carbon (II) oxide (1mk)

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c) Give three ways in which the carbohydrates produced in the organelles at D is utilized in the plants. (3mks)

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SECTION B: 40 MARKS

6. The following data are results from an observation and measurement of daily growth in an organism over a period of 24 days of its development

a) Using a suitable scale draw graphs of width of head and length of femur against time on the same axis. (8mks)

DAY	**WIDTH OF HEAD**	**LENGHT**
	Mm	**Femur (mm)**
1	3.0	7.0
2	3.5	7.5
3	4.0	8.0
4	4.0	8.0
5	4.0	8.0
6	4.0	9.2
7	4.0	10.5
8	4.0	12.0
9	4.7	12.0
10	5.0	12.0
11	5.0	12.0
12	5.0	12.0
13	5.0	12.0
14	5.0	12.0
15	5.0	13.3
16	5.0	14.8
17	5.7	16.4
18	6.4	18.0
19	7.0	18.0
20	7.6	18.0
21	7.6	18.0
22	7.6	18.0
23	7.6	18.0
24.	7.6	18.0

b) i) Name the growth pattern represented by the graph. (1mk)

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ii) With reference to your graph, identify the phylum to which the organism belongs. Give reasons for your answer. (2mks)

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c) Account for the length of hind femur between

(i) day 3 and day 7 (2mks)

(ii) day 7 and day 10 (2mks)

d) State two hormones involved in the growth pattern represented by the graphs . (2mks)

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e) State two advantages of metamorphosis in organisms. (2mks)

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7. Explain how the various activities of man have caused air pollution. (20mks)

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8. a) What are enzymes? (2mks)

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b) State the properties of enzymes (6mks)

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c) Discuss the factors that affect the rate of enzyme – catalysed reactions (12mks)