

Name..... Index No.....

School..... Candidates Signature.....

Date:

231/1

BIOLOGY

(THEORY)

Paper 1

July/August 2011

Time: 2 Hours

MASINGA DISTRICT JOINT EVALUATION TEST - 2011

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

BIOLOGY

Paper 1

July/August 2011

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES.

- ✓ Answer all the questions in the space provided.
- ✓ Additional pages **MUST** not be inserted.
- ✓ Candidates may be penalized for false information and even wrong technical terms.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE SCORE
1 - 30	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

1. (a) State **one** function of the plasma membrane.

(1 Mark)

.....

.....

- (b) Give **two** functions of golgi apparatus.

(2 Marks)

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2. Give an example of a sex-linked trait in human in:

- (i) Y – Chromosome

(1 Mark)

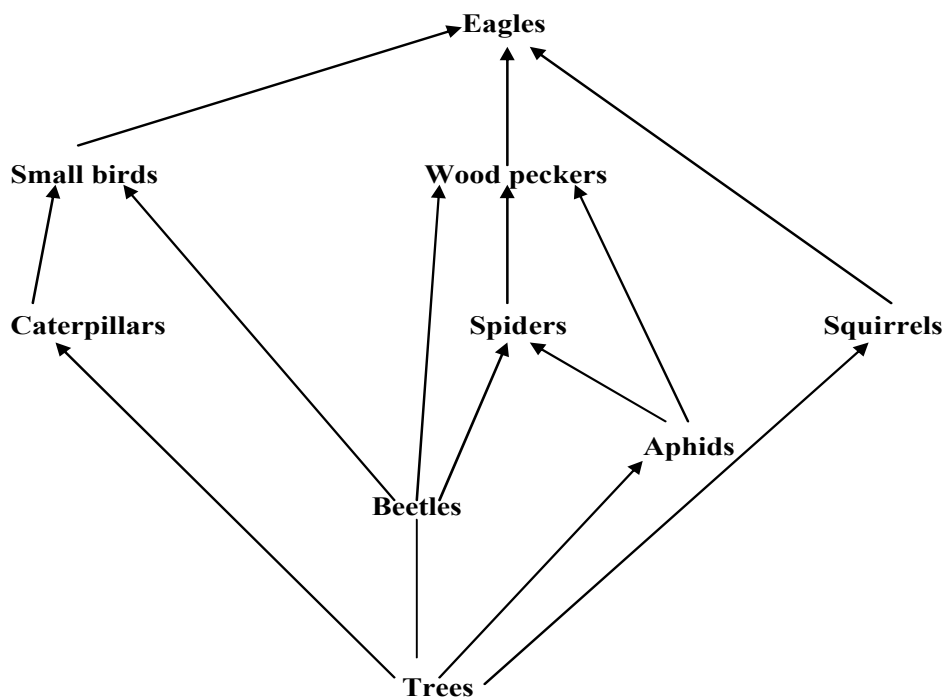
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- (ii) X – Chromosome

(1 Mark)

.....

3. The diagram below represents a foodweb in a forest.



- a. Construct a food chain ending with a tertiary consumer.

(1 Mark)

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- b. Name the highest trophic level occupied by the eagles.

(1 Mark)

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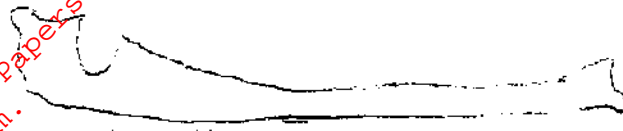
- c. What would happen if caterpillars are eliminated using an insecticide.

(2Marks)

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4. A bone obtained from a mammal is represented by the diagram below.



- a) Name the bone. (1 Mark)

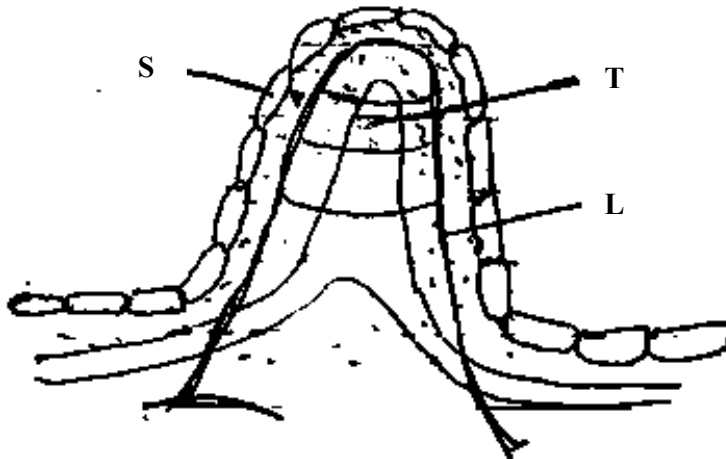
- b) Which bones articulates with the bone shown in the diagram at the notch. (2Marks)

5. What is the role of the following in the human body:-

- a) Vitamin K. (1Mark)

- b) Iron. (1 Mark)

6. The diagram below represents part of the ileum lining.



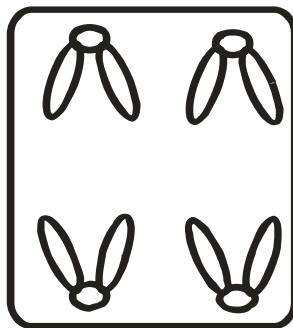
- a) Name the structure. (1 Mark)

- b) Name the part labelled T. (1 Mark)

- c) State how the above structure is adapted to its function. (2Marks)

7. State **two** adaptations of alveoli to gaseous exchange. (2Marks)

8. Below is an animal cell undergoing cell division.



a) Name the type of cell division.

(1 Mark)

.....

b) Where was the cell derived from?

(1 Mark)

.....

c) Identify the stage of cell division shown by this cell.

(1 Mark)

.....

9. A person was found to pass out large volume of dilute urine frequently. Name the:-

a) Disease the person was suffering from.

(1 Mark)

.....

b) Hormone that was deficient.

(1 Mark)

.....

10. Give a reason why each of the following steps is followed when preparing a Cross-section of a leaf for examination under a microscope.

a) Cutting very thin sections.

(1 Mark)

.....

b) Placing the sections in water.

(1 Mark)

.....

c) Staining the sections in iodine before observing under the microscope.

(1 Mark)

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11. State **two** ways in which active transport differs from diffusion.

(2 Marks)

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12. a) Why are people with blood group AB universal recipients?

(2 Marks)

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.....

b) Name the antibodies in blood group O.

(1 Mark)

13. a) Define organic evolution.

(1 Mark)

b) Give **two** examples of vestigial structures.

(2 Marks)

14. The central canal of the spinal cord is filled with.

(1 Mark)

15. a) Besides the abdomen name the other part of members of arachnida.

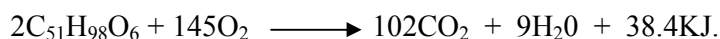
(1 Mark)

b) i) State **two** economic importance of members of kingdom fungi.

(2 Marks)

ii) What is the material composing the cell walls of organisms in kingdom fungi. (1 Mark)

16. The oxidation of a certain food substance is expressed by a chemical equation shown below.



(a) Calculate the respiratory quotient.

(2 Marks)

(b) Name the class of food being oxidized.

(1 Mark)

17. In an experiment it was observed that when maggots are exposed to light, they move to dark areas. On the other hand, Euglena and Chlamydomonas move towards light.

a) Name the type of response exhibited by the organisms.

(1 Mark)

b) State one advantage of the response shown by Euglena and Chlamydomonas.

(1 Mark)

18. Explain the importance of Osmoregulation in organisms.

(2 Marks)

19. What is the causative agent of the following:-

- a) Tuberculosis (1 Mark)

.....

- b) Bilharzia (1 Mark)

.....

20. Which enzyme is responsible for breaking down sodium hydrogen carbonate in mammalian – blood to release Carbon (iv) Oxide? (1 Mark)

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21. List down **three** different types of muscles found in the mammalian body. (3 Marks)

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22. In nature plants are cross-pollinated rather than being self-pollinated.

- a) List **three** features that hinder self-pollination in most plants. (3 Marks)

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- b) State **one** advantage of cross-pollination in plants. (1 Mark)

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23. Explain how xylem vessels are adapted to their function. (2 Marks)

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24. State **two** ways of breaking seed dormancy. (2 Marks)

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25. a) Distinguish between epigeal and hypogeal germination. (2 Marks)

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- b) State the function of coleoptile in the maize seedling. (1 Mark)

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26. Give the functions of the following parts of human eye.

a) Lens (1 Mark)

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b) Ciliary body (1 Mark)

.....

c) Cornea (1 Mark)

.....

27. What is the role of the following hormones in the mammalian reproductive system?

a) Testosterone. (1 Mark)

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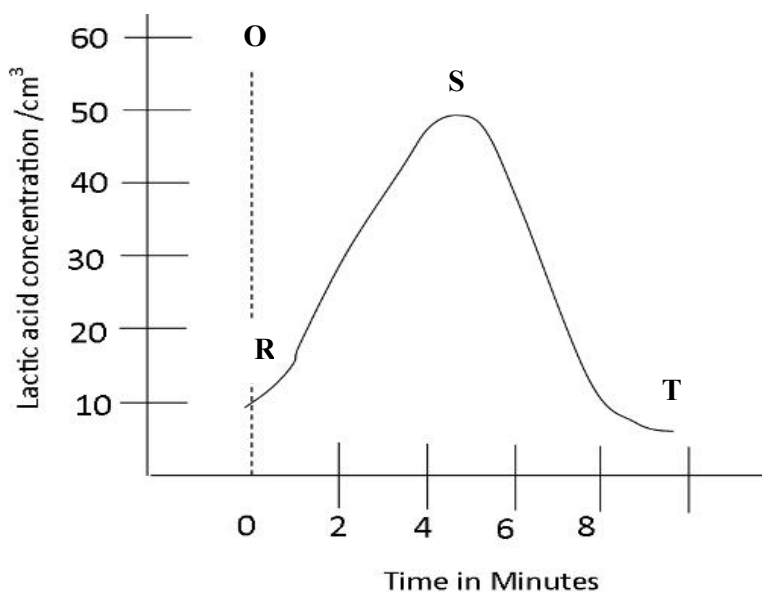
b) Progesterone. (1 Mark)

.....

c) Luteinising hormone. (1 Mark)

.....

28. The diagram below shows the general appearances of lactic acid in the blood of an athlete after an exercise.



a) What is the significance of the line marked O? (1 Mark)

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b) Explain what was happening in the body between points:

(i) R and S. (1 Mark)

.....

(ii) S and T. (1 Mark)

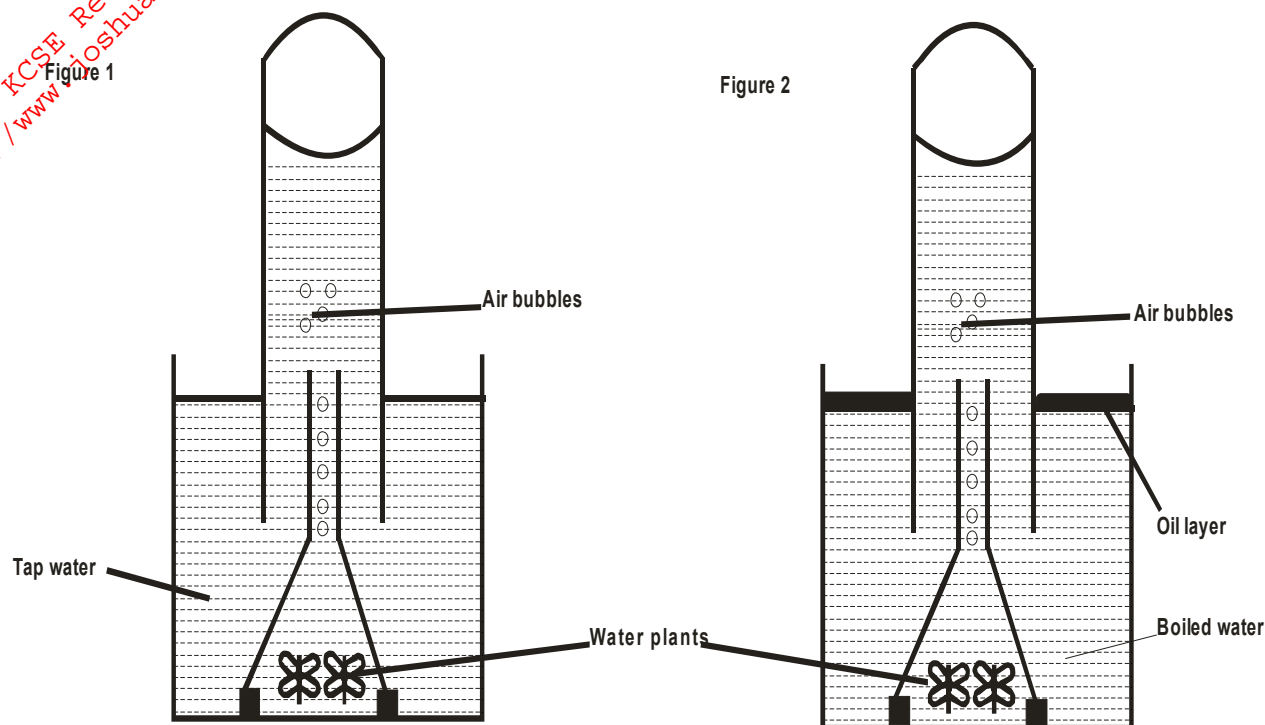
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c) What is oxygen debt?

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29. Figure 1 and 2 show two set of apparatus used by a group of students to investigate some physiological process. The apparatus were put in bright light for sometime some air bubbles were evolved in figure 1 while no change was observed in figure 2.



a) Name the gas responsible for air bubbles in figure 1.

(1 Mark)

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b) i) Account for the formation of bubbles in figure 1 and not in figure 2.

(2 Marks)

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(ii) Which one of the set up's was the control experiment?

(1 Mark)

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30. The study of insects is known as

(1 Mark)

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