

NAME:.....INDEX .....

SCHOOL:.....SIGNATURE..... DATE.....

231/1  
BIOLOGY  
PAPER 1  
(Theory)  
JULY/AUGUST 2012  
TIME: 2HOURS

**BUNGOMA JOINT INTER-SCHOOLS EVALUATION TEST (JISSET)**

**Kenya Certificate of Secondary Education 2012**

231/1

BIOLOGY

PAPER 1

**INSTRUCTIONS TO CANDIDATES**

- ❖ Write your name and index number in the spaces provided.
- ❖ Answer ALL the questions in the spaces provided,

**FOR EXAMINERS USE ONLY**

Question	Maximum score	Candidates score
1-27	80	

1. **Explain** the following terms.

a) Taxonomy (1mrk)

.....  
.....

b) Species (1mrk)

.....  
.....

2. State **three** features used in classifying arthropods into classes. (3mrks)

.....  
.....  
.....

3. a) **Name** the substance that accumulates in muscles when respiration occurs with insufficient Oxygen. (1mrk)

.....

b) Give the **three** end products of anaerobic respiration in plants. (3mrks)

.....  
.....  
.....

4. a) State **three** characteristics of a wind pollinated flower. (3mrks)

.....  
.....  
.....

b) **Explain** why sexual reproduction is important to organisms. (1mrk)

.....  
.....

5. **State** the functions of the following organelles.

a).Lysosomes (1mrk)

.....

b).Golgi apparatus (1mrk)

.....

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6. What is the role of vascular bundles in plant nutrition? (3mrks)

.....

.....

.....

7. Haemophilia is a genetic disorder which is transmitted through a recessive gene linked to the X chromosome. Using **H** to represent the normal gene and **h** for haemophilia, work out the genotypic ratio of the offspring of a marriage between a woman who is carrier for haemophilia gene and a normal man. (4mrks)

8. a) In what form does energy enter the earth's ecosystem? (1mrk)

.....

b) What is the main source of energy in an ecosystem (1mrk)

.....

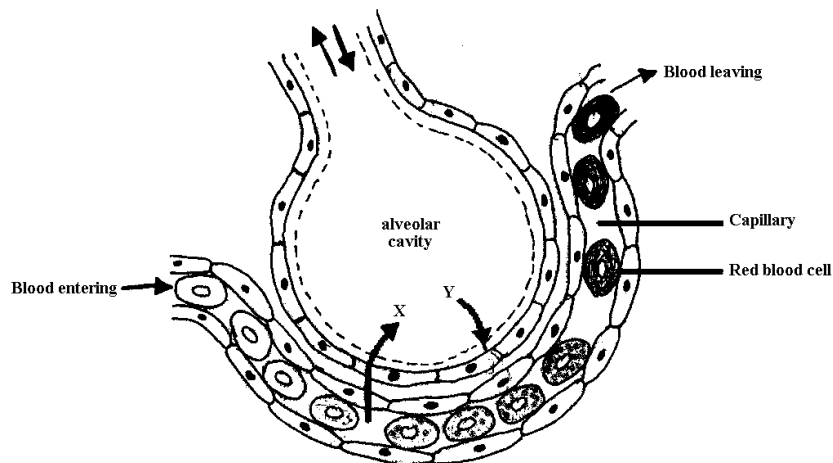
c) In what form does energy transferred from one trophic level to another? (1mrk)

.....

d) If only a small fraction of energy is transferred from one trophic level to another, what happens to the rest of the energy? (1mrk)

.....

9. The diagram below represents gaseous exchange in the alveolus.



a). Identify the gases labeled X and Y. (2mrks)

.....  
.....

b). Trace the path followed by gas Y from alveolar space until it reaches the red blood cells. (3mrks)

.....  
.....

c). **Name** the part of the brain that controls breathing movement in humans. (1mrk)

.....  
.....

10. The table below shows the energy use per day in kilojoules

Age(years)	Male	Female
2	5,500	5,500
5	7,000	7,000
8	8,800	8,000
11	10,000	9,200
14	12,500	10,500
18	14,200	9,600
25	12,100	8,800

a). From the table, explain why after age 8 males require more energy than females. (1mrk)

.....  
.....

b). Other than sex and age, name **three** other factors that determine energy requirements in human beings (3mrks)

.....  
.....

11. a) Define organic evolution. (1mrk)

.....  
.....

b). Give the role played by variation in the process of evolution. (2mrks)

.....  
.....

12. a) What are halophytes?

(1mrk)

b) **State three** adaptations of halophytes to their habitats.

(2mrks)

13. a) **Name** the causative agent of the following diseases in humans.

(2mrks)

Syphilis.....

Herpes.....

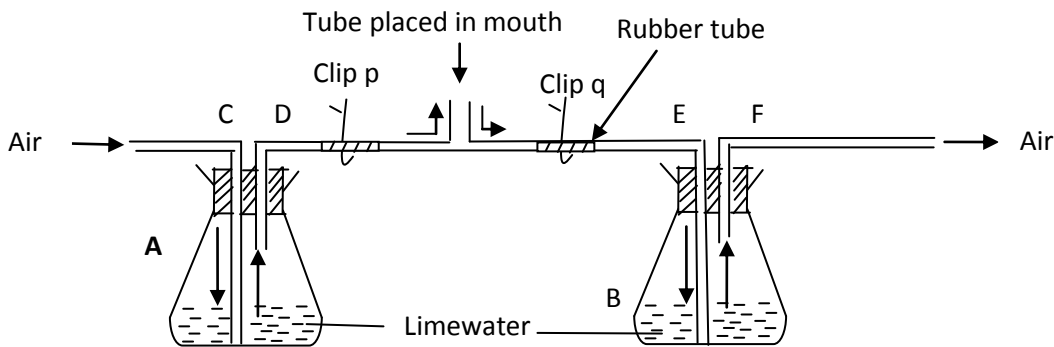
b). State the functions of the following structures.

(2mrks)

Fallopian tube.....

Amniotic fluid.....

14. An experiment was set up as shown below to compare the amount of carbon (iv) oxide in expired and inspired air.



a). **State** the purpose of the clip

(2mrks)

i). P.....

ii). Q.....

b). Compare the observations in flask A and B after the experiment. Give reasons for your answer.

(2mrks)

.....  
.....

15. **Name** the form in which carbohydrates are stored in. (2mrks)

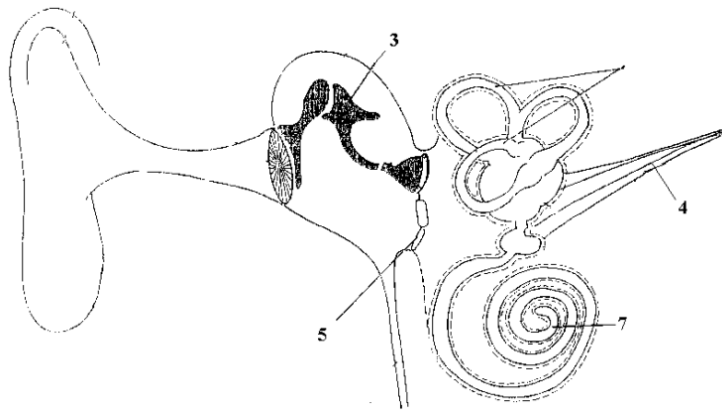
i). Plants tissues .....

ii). Animal tissues .....

16. **Explain** how water is gained from the soil by root hairs in plants. (3mrks)

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.....  
.....  
.....

17. The diagram below shows the human ear.



a). Name the structures labeled 3, 4 (2mrks)

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.....  
.....

b). **State** the function of the parts labeled 5 and 7. (2mrks)

.....  
.....

18. Give the survival value of the following tropic responses

a). Geotropism (1mrk)

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.....

b). Haptotropism (1mrk)

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.....

c). Chemotropism (1mrk)

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.....

19. Distinguish between **single** and **double** circulatory systems. (1mrk)

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.....

20. Name **one** disorder caused by a dominant gene. (1mrk)

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.....

21. Name the spore producing structures in pteridophytes. (1mrk)

.....  
.....

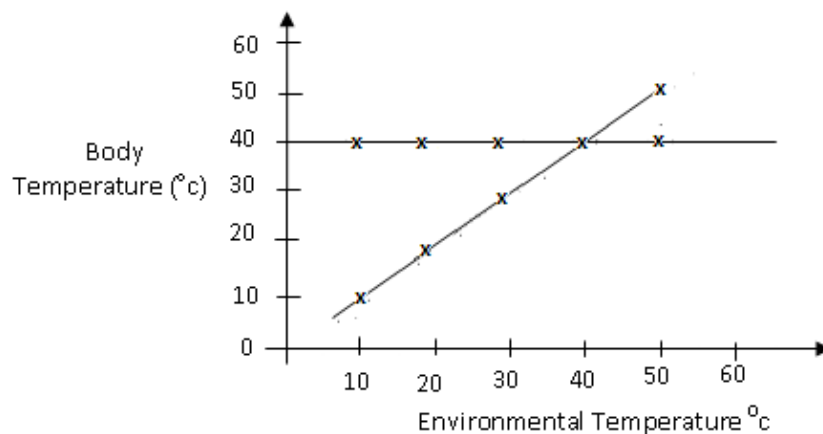
22. a) Define transpiration. (1mrk)

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.....

b). State **two** environmental factors that decrease the rate of transpiration. (2mrk)

.....  
.....

23. The graph below shows the relationship between environmental temperature and the body temperature in two different animals A and B.



a). **State** the relationship between the body temperature of animal A and external environmental temperature. (1mrk)

.....  
.....

b). Give the term used to describe;

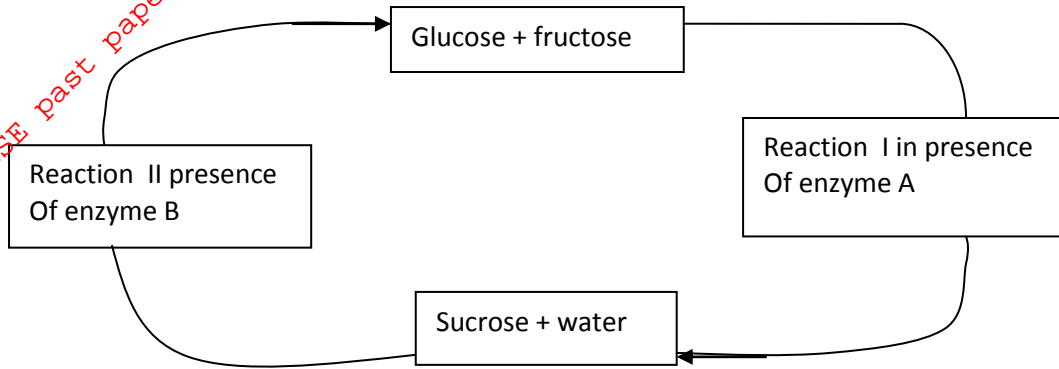
i). Animals of type A .....(1mrk)

ii). Animals of type B .....(1mrk)

24. Nitrogen in the atmosphere cannot be directly utilized by plants. **State two** ways by which this Nitrogen is made available for plant use. (2mrk)

.....  
.....  
.....

25. The diagram below shows chemical reaction I and II which are controlled by enzyme A and B.



Name the reaction I and enzyme B (2mrks)

Reaction I.....

Enzyme B.....

26. **State two** main functions of a microscope. (2mrks)

.....  
.....  
.....

27. in what form is carbon (IV) oxide transported in blood. (2mrks)

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