

Name.....

Index No...../.....

School.....

Candidates Signature.....

Date

231/1

BIOLOGY

THEORY

Paper 1

July/August 2009

2 Hours

BORABU INTER - SECONDARY SCHOOL

JOINT EVALUATION TEST - 2009

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

231/1

BIOLOGY

THEORY

Paper 1

July/August 2009

2 Hours

INSTRUCTIONS TO CANDIDATES

- Write your name and Index Number in the spaces provided above.
- Sign and write date of examination in the spaces provided above.
- Answer **ALL** questions in the spaces provided.
- All workings **MUST** be clearly shown where necessary.

For Examiners use only.

Question	Maximum Score	Candidates Score
1 – 24	80	

*This paper consists of 8 Printed pages.
Candidates should check the question paper to ensure that all the
Papers are printed as indicated and no questions are missing*

1. (a) State **two** structural adaptations that make xylem vessels suitable for transport of water and mineral salts. (2mks)

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

(b) List any **three** adaptations of the root hair cells to their functions (3mks)

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

2. (a) Why would you give an athlete glucose and not sucrose after a race? (1mk)

.....
.....

(b) What happens to lactic acid after oxygen debt recovery? (2mks)

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

3. (a) What is gene mutation (1mk)

.....
.....

(b) State **two** disorders in human beings caused by gene mutations (2mks)

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

(c) What name is given to the factors in the environment that encourage or speed up mutation? (1mk)

.....
.....

4. State the role of the following elements to the growth and development of plants (3mks)

(i) Calcium

.....
.....

(ii) Magnesium

.....
.....

(iii) Nitrogen

.....
.....

5. State **three** environmental factor that affect the rate of stomatal transpiration (3mks)

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

6. (a) What is the function of the following parts of the male reproductive system (3mks)

(i) Epididymis:-

.....
.....

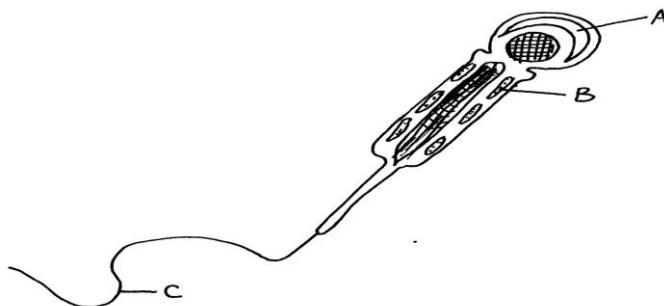
(ii) Seminal vesicle:-

.....
.....

(iii) Interstitial cells:-

.....
.....

(b) The diagram bellow shows the structure of a sperm cell. Identify the parts labeled A, B and C and state their functions (6mks)



PART	IDENTITY	FUNCTION
A		
B		
C		

7. (a) Define the following terms:- (2mks)

(i) Species:

.....
.....

(ii) Binomial nomenclature:-

.....
.....

(b) A certain sea animal has a smooth skin, lungs, regulates its body temperature and gives birth to young ones. The animal belong to the class.....(1mk)

8. For a leaf to be efficient for photosynthesis it has to be broad and flat. Explain (2mks)

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

9. (a) In an accident, a victim suffered brain injury. Consequently the heart beat was affected. Name the part of the brain which was injured (1mk)

.....
.....

(b) State **two** differences that may be observed between a normal male and one who is incapable of producing testosterone. (2mks)

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

10. Differentiate between convergent evolution and divergent evolution (2mks)

Convergent

.....
.....

Divergent

.....
.....

11. (a) State **two** physiological changes that take place in a human skin in order to facilitate heat loss from the body. (2mks)

.....
.....

.....

 (b) State **two** functions of sebum (2mks)

12. (a) Define the term Homeostasis (1mk)

 (b) State **one** way by which mammalian blood carry out homeostasis function (1mk)

 (c) Differentiate between nervous and endocrine communication in animals (3mks)

Nervous communication	Endocrine communication
(i)	
(ii)	
(iii)	

13. (a) Name the cartilage found between the bones of the vertebral column (1mk)

 (b) State the function of the cartilage named in (a) above (1mk)

14. State the functions of the following organelles:
 (a) Lysosomes:- (2mks)

 (b) Golgi apparatus:-

15. What is parthenocarpy? (1mk)

- 16 State **three** reasons why geneticists prefer to use **drosophila melanogaster** (fruitfly) for genetic experiments. (3mks)

17. What is the significance of active transport in the human body. (3mks)

18. In an attempt to clear a certain weed from St. Thomas Moore fish pond, Riang'ombe Sec. School Biology students introduced a species of beetles into the pond.
 (a) Give the term used for this method of control (1mk)

 (b) State **two** advantages of this method over the use of herbicides (2mks)

19. (a) State the causative agent of cholera (1mk)

 (b) What is the cause of dehydration in cholera victims (1mk)

20. (a) The numbers of chromosomes in a Gorilla cheek cell is 48. State the number of chromosomes in a Gorilla's ovum. (1mk)

(b) Give the role of each of the following during cell division (2mks)

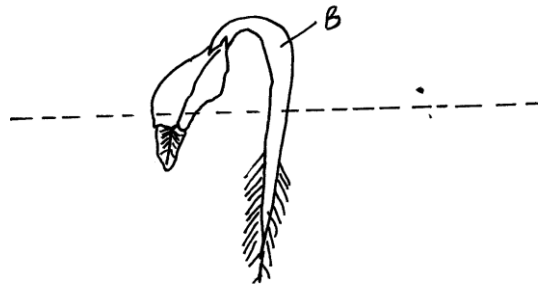
(i) Centrioles:-

.....
.....

(ii) Spindle fibres:-

.....
.....

21. The diagram below shows a germinating seedling



(a) Name the part of the seedling labeled B (1mk)

.....
.....

(b) State the type of germination exhibited above (1mk)

.....
.....

22. (a) Name **two** hormones that control metamorphosis in insects (2mks)

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

(b) Identify the plant hormone responsible for

(i) Callus tissue formation (1mk)

.....
.....

(ii) Formation of abscission layer (1mk)

.....
.....

(iii) Fruit ripening (1mk)

.....
.....

23. (a) Name **three** ways by which flowering plants eliminate waste products from their body (3mks)

.....

.....

.....

.....

.....

.....

(b) What is the importance of the following excretory products from plants (3mks)

(i) Papain:-

.....

.....

(ii) Nicotine:-

.....

.....

(iii) Quinine:-

.....

.....

24. State **three** types of skeletons found in animals (3mks)

.....

.....

.....

.....

.....

.....

END