

NAME: INDEX NO:

SCHOOL: DATE :

CANDIDATE'S SIGNATURE:.....

231/1
BIOLOGY
PAPER 1
JULY / AUGUST 2014
TIME: 2 HOURS

NANDI NORTH SUB-COUNTY JOINT EVALUATION 2014

Kenya Certificate of Secondary Education (K.C.S.E.)
BIOLOGY
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- (a) Write your **Name**, **Index Number** and **School** in the spaces provided.
- (b) **Sign** and **write** the **date** of examination in the spaces provided.
- (c) Answer **ALL** questions in the spaces provided.
- (d) Wrong spelling especially of technical terms will be penalized.

FOR EXAMINER'S USE ONLY

QUESTION	MAX. SCORE	CANDIDATE SCORE
1 – 27	80	

1. (a) State **two** structural differences between arteries and veins. (2mks)

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(b) Explain why carbon II oxide (Carbon monoxide) is regarded as respiratory poison.(3mks)

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2. A certain plant had the following characteristics; Green, mainly terrestrial growing on wet sheltered substratum, exhibits alteration of generations (gametophyte is the dominant plant).

(a) Identify the division to which the plant belongs. (1mk)

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(b) Give an example of the plant that belongs to the division in (a) above. (1mk)

.....

3. Name the organelle that performs each of the following in a cell:

(i) Transport cell secretions (1mk)

.....

(ii) Transport proteins (1mk)

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4. (a) What is oxygen debts? (1mk)

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(b) Explain what happens when there is oxygen debt in muscles. (2mks)

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5. (a) State **three** functions of the exoskeleton in arthropods. (3mks)

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(b) What is the limitation posed by an exoskeleton on an insect's body? (1mk)

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6. Explain why amoeba does not burst yet it is found in a fresh water habitat. (3mks)

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.....

7. Name the taxonomic group which contains:

(a) The largest number of organisms. (1mk)

.....

(b) Individuals with most similarities. (1mk)

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8. Give **three** ways in which endotherms lose heat to the external environment. (3mks)

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.....

9. Name **two** hormones in insects that play major roles in metamorphosis. (2mks)

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10. Name the form in which carbohydrate is stored in:

(a) Plants (1mks)

.....

(b) Animals (1mk)

.....

11. Name the excretory products of plants which are used to perform the following:

(i) Plant and animal breeding. (1mk)

.....

(ii) Manufacture of insecticides and cigarettes. (1mk)

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(iii) Treatment of malaria. (1mk)

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12. Suggest **three** ways of reducing the global warming. (3mks)

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13. In an experiment, the pituitary gland of a rat was removed.

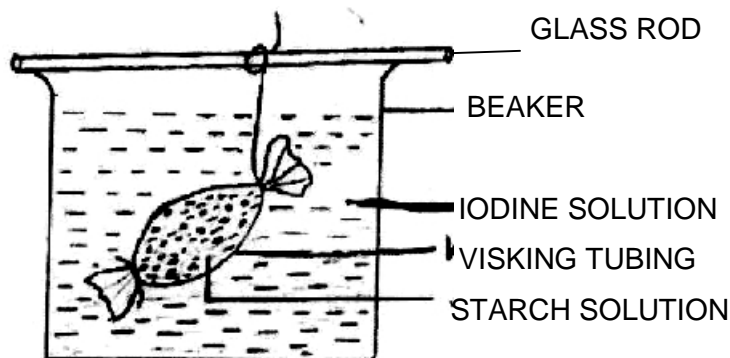
(a) State the effect this will have on the quantity of urine produced by a rat. (1mk)

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(b) Give a reason for your answer. (1mk)

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



(a) Name the physiological process being investigated. (1mk)

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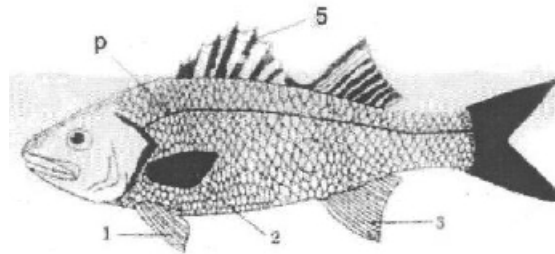
(b) Explain the results that would occur in the experiment after 30 minutes. (3mks)

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15. Name the causative agents of the following diseases in humans. (2mks)

Disease	Causative agent
Typhoid	
Malaria	

16. The diagram below represents a bony fish.



(a) State **two** observable features that justify the inclusion of specimen above in class Pisces. (2mks)

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.....

(b) From the diagram, identify the fins which carry out the following functions:

(i) Balancing and braking. (1mk)

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(c) State the function of the part labeled P. (1mk)

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.....

17. State **three** processes which occur during interphase of mitosis. (3mks)

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18. (a) Name the enzyme that completes fat digestion in human. (1mk)

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(b) State **two** adaptations of herbivores which enables them to digest cellulose. (2mks)

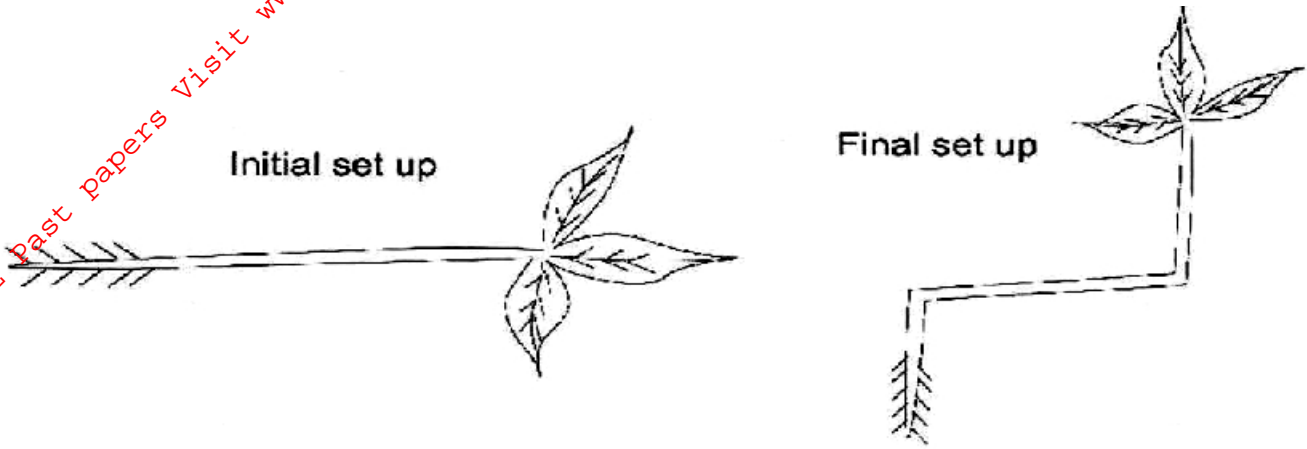
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19. (a) Give **three** reasons why Drosophila is considered a suitable organism for use in genetic experiments. (3mks)

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(b) Explain how crossing over brings about variation. (1mk)

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20. Study the experimental set up below exhibiting a certain response in plants.



(a) Identify the response above. (1mk)

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(b) Name the hormone responsible. (1mk)

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21. (a) What is meant by the term survival of the fittest as used in evolution? (2mks)

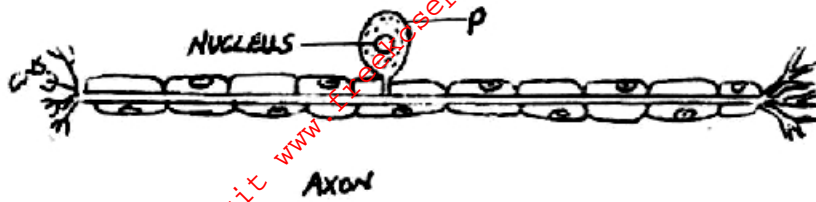
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(b) Explain cell biology as an evidence of organic evolution. (2mks)

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.....
22. List down three differences between endocrine system and nervous system. (3mks)

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.....
23. (a) State two structural differences between a skeletal muscle and a smooth muscle. (2mks)

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.....
(b) State two functions of spinal cord. (2mks)

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24. The diagram below represents a nerve cell.

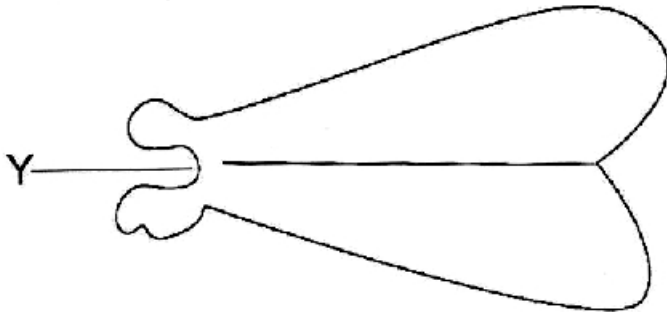


(a) Identify the cell. (1mk)

.....
(b) Name the part marked P. (1mk)

.....
(c) Using an arrow on the diagram, indicate the direction of the impulse movement. (1mk)

25. Study the diagram below representing parts of a mammalian skeleton.



(a) Name the bone. (1mk)

.....
(b) Which bone articulates with the above bone at point Y? (1mk)

.....
(c) Name the type of joint formed with bone at point Y.

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26. Give **two** functions of calcium in human body. (2mks)

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27. (a) How do the etiolated plant differ from the normal plant? (2mks)

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(b) State the importance of etiolation in plants. (2mks)