

NAME:INDEX NO:.....

SCHOOL:.....

231/1
BIOLOGY
PAPER 1
THEORY
JULY / AUGUST 2007
TIME: 1 ¾ HOURS

KERICHO DISTRICT MOCK EXAMINATION Kenya Certificate of Secondary Education 2007.

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BIOLOGY
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INSTRUCTIONS TO CANDIDATES

- ❖ Answer **ALL** the questions in the spaces provided on the question paper.
- ❖ Do not insert any other additional paper.

For Examiners Use Only.

Question	Maximum Score	Candidate's Score
1-24	80	

1. (i) **State** the characteristics that can separate the following organisms into their respective classes: Millipedes, Tsetse fly, Spider (2mks)

.....

(ii) **Suggest** the external features which would be used to distinguish between members of the class chilopoda and diplopoda. (1mk)

.....

2. **Name** an organelle that:-

(a) Manufacture and transport lipids and steroids in the cell (1mk)

.....

(b) That contains enzymes that are capable of destroying old and damaged cells. (1mk)

.....

3. **What** is adaptive radiation? **Give** an example.

Adaptive radiation (1mk)

.....

Example (1mk)

.....

4. **Explain** why a rat has a higher food intake compared to a lizard of the same body weight. (2mks)

.....

5. **Give one** structural and one functional between skeletal and smooth muscle. (2mks)

(i) Structural difference

.....

(ii) Functional difference

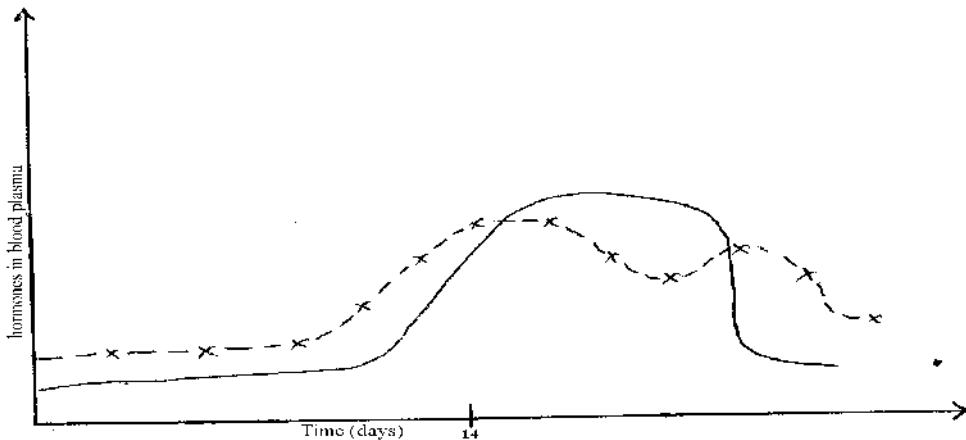
.....

6. **State** the function of cilia found in the mammalian trachea. (1mk)

.....

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

8. The graph above illustrates relative levels of Oestrogens and progesterone during the human menstrual cycle.



(a) Mark on the graph the curves that represents

(i) Progesterone

(ii) Oestrogen

(2mks)

(b) **Which** is the most likely day of ovulation from the graph?

(1mk)

.....

9. (i) **What** is biological control of population growth? (1mk)

.....

(ii) **Explain** why the number of predators in an ecosystem is less than the number of their prey. (2mks)

.....

10. (i) **State** the features that adapt Hydrophytes to their habitat. (3mks)

.....

11. i) **List four** causes of seed dormancy in each case; state how such dormancy is broken. (2mks)

Causes

.....

Ways of breaking dormancy.

.....

(iii) **Explain** the change that takes place at the beginning of germination. (2mks)

.....

(i) **State** the Units that constitute a nucleotide of a DNA strand. (1mk)

.....

(ii) The diagram below shows the base sequence of part of a nucleic acid strand.

Observe it and answer the questions that follow:

T T A G C T G A

(a) Giving your reasons **state** whether it is part of a DNA or an RNA strand. (2mks)

.....

(b) **Show** the complimentary DNA strand. (1mk)

.....

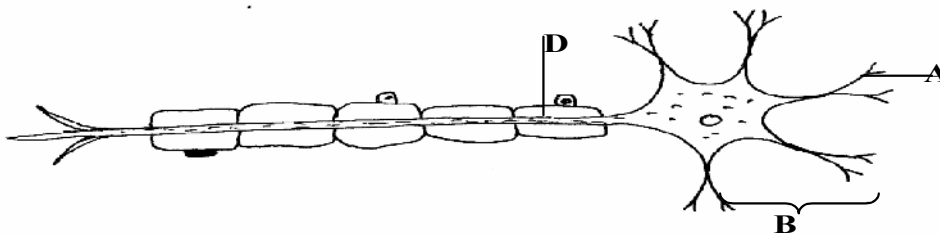
(c) **Show** the complimentary RNA strand. (1mk)

.....

12. **Explain** why taking an under dose of antibiotics may lead build up a population of resistant bacteria. (2mks)

.....

13. **Diagram** below shows the structure of motor neuron.



(a) **Name** the parts labelled. (2mks)

A

.....

B

.....

(b) **State three** adaptations that enable the neurone to carry out its functions efficiently. (3mks)

.....

-
-
- (c) **State two** features that would distinguish sensory neurone from the above neurone. (2mks)
-
-
14. (a) **Explain** how light ray from a distant and near objects are brought to focus on the retina. (4mks)
- (i) Distant object. (4mks)
-
-
-
- (ii) Near object. (4mks)
-
-
-
15. The leaves of some insectivorous plants make rapid movements when they are touched by an insect.
- (i) **Give** an example of such a plant. (1mk)
-
- (ii) **What** name is given to this type of response? (1mk)
-
- (iii) **What** is the biological significance of this response? (2mks)
-
-
16. (a) **State two** functions of Muscles found in the alimentary canal of mammal. (2mks)
-
-
- (b) **Explain** why the stomach has three layer of smooth muscles instead of two layers contained in the rest of the alimentary canal. (1mk)
-
-
17. **Explain** how water in the soil enters the root hairs of a plant. (3mks)
-
-
-
-
18. **State three** structural adaptations of xylem tissues to their functions. (3mks)
-
-
-
19. (i) **Give three** reasons why the pressure of blood is greater in the arteries than in the veins of mammals. (3mks)
-
-
-
- (ii) **Explain two** ways in which capillaries are adapted to carry out their functions. (2mks)
-
-
-
20. **Name three** sites where gaseous exchange takes place in terrestrial plants. (3mks)
-
-
-

21. **Give two** reasons why accumulation of lactic Acid during vigorous exercise leads to an increase heart beat. (2mks)
.....
.....
22. **State** the functions of the following part of the mammalian ear; (2mks)
(i) Tympanic membrane.
.....
23. **State** the roles of the following plant hormones in growth and development. (4mks)
(i) Indole Acetic Acid (IAA) (1mk)
.....
(ii) Gibberellins (1mk)
.....
(iii) Ethylene (1mk)
.....
(iv) Cytokinins (1mk)
.....