

NAME:.....
SCHOOL:.....

INDEX NO:.....
DATE:.....
SIGN:.....

231/1
BIOLOGY
PAPER I
(THEORY)
JULY/AUGUST - 2012
TIME: 2 HOURS

MANGA DISTRICT JOINT EVALUATION EXAM– 2012
Kenya National Examination Council (K.C.S.E)

231/1
BIOLOGY
PAPER I
(THEORY)
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INSTRUCTIONS TO CANDIDATES

- (a) Write your name and Index number in the spaces provided.
- (b) Answer ALL questions in the spaces provided.

FOR EXAMINERS USE ONLY.

QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
1 – 30	80	

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

Answer all the questions in the spaces provided

1. State two feature common in mammals and bird (2 marks)

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2. Name the causal organism of the following diseases in humans; (2 marks)

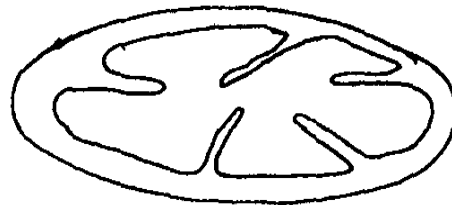
a) Bilharzi

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b) Syphilis

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3. i) Identify the organelle shown below (1 mark)

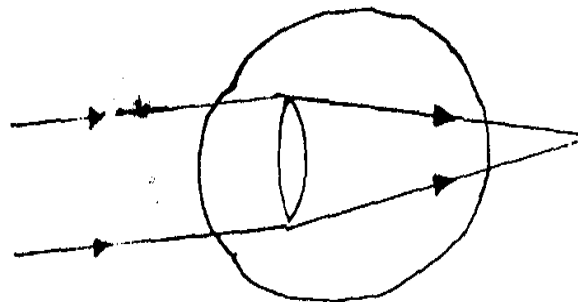


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ii) How is the organelle you have identified in a(1) above suited to its function (2 marks)

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4 Use the diagram below to answer the questions that follow



i) Name the eye defect represented above (1 mark)

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ii) What is the cause of this defect (1 mark)

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iii) How can the defect you have named (a) (i) be corrected? (1 mark)

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5. Name the components of the blood that do not enter the renal tubule in mammals. (2 marks)

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6. Give two factors affecting the rate of respiration. (2 marks)

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7. State three structural differences between muscles alimentary canal and biceps muscles. (3 marks)

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8. a) Name the micro-organism found in the root nodules of legumes (1 mark)

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b) State the association of the micro-organisms named in (a) above (1 mark)

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c) What is the role of the micro-organism you named in (a) above. (1 mark)

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9. a) Name the stage in mitosis where chromatids collect together at the two opposite ends of the spindle fibres. (1 mark)

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b) State two functions of centrioles (2 marks)

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10. a) State two functions of large intestines in man. (2 marks)

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b) Name the disease caused by lack of each of the following in human diet. (3 marks)
Vitamin D

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Iodine

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Iron

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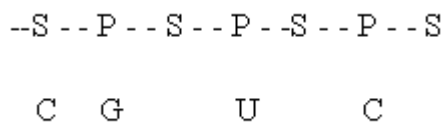
11. a) In a blood test, a few drops of anti-B serum were added to two samples of blood. It was noted that agglutination occurred. What were the possible blood groups of the two blood samples? (2 marks)

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b) Why would carboxyhaemoglobin lead to death? (2 marks)

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12. The figure below is a structural diagram of a portion from a nucleic acid strand.



a) Giving a reason, name the nucleic acid to which the portion belongs. (2 marks)

Name

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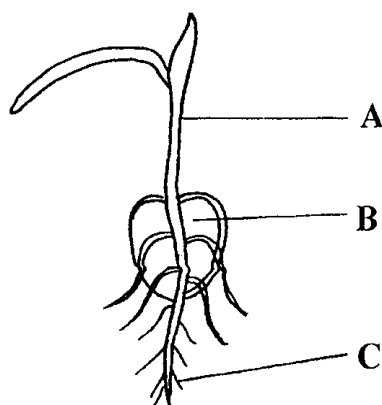
Reason

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b) Write down the sequence of bases of a complimentary strand to that (1 mark)

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13. The diagram below represents a maize seedling.



a) Name the structure labeled A and C (2mks)

A

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.....

C

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b) i) State the functions of parts labeled B and C (2 marks)

B

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C

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ii) Name the type of germination exhibited by maize. (1 mark)

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14. What is meant by the following terms? (2 marks)

a) Carbon (IV) oxide fixation

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b) Compensation point

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15. a) State two ways in which floating leaves of aquatic plants are adapted to gaseous exchange

(2 marks)

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b) Name two structures for gaseous exchange in aquatic plant.

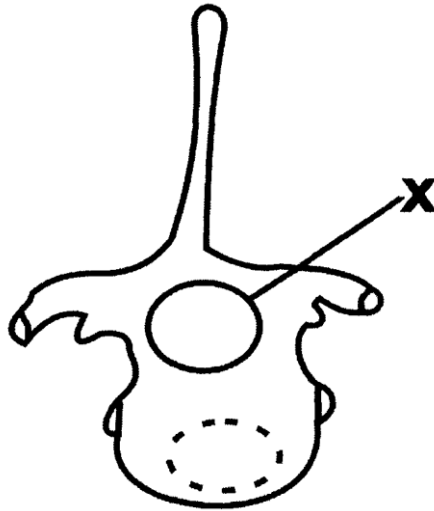
(2 marks)

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16. Outline three roles of active transport in the human body.

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17. The diagram below shows a bone from a mammal.



a) Name the structure that passes through part labeled X. (1 mark)

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b) What function does the vertebra provide for structure X (1 mark)

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c) In which region of the vertebral column is:

i) The bone found? (1 mark)

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ii) Give a reason for your answer in c (i) above. (1 mark)

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18. a) Explain how the following parts of a mammalian reproductive system are adapted to their functions. (2 marks)

i) Testis

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ii) Uterus

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b) Explain why removal of the ovary after four months of pregnancy does not terminate pregnancy.

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19. State the role of the following hormones in homeostasis

i) Antidiuratic hormone (vasopressin) (1 mark)

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ii) Aldosterone hormone (1 mark)

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20. Distinguish between plasmolysis and haemolysis (2 marks)

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21. Give two reasons why pressure of blood is greater in arteries than in the veins of mammals. (2 marks)

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22. a) What is meant by

i) Autecology (1 mark)

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ii) Synecology (1 mark)

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23. An organelle was magnified 800 times by an electron microscope. Its diameter was 2 millimetres. Calculate the actual diameter in micrometres. (2 marks)

24. Give two advantages of natural selection to organisms. (2 marks)

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25. a) State two ways in which some fungi are harmful to man (2 marks)

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b) List the main characteristics that are used to sub- divide arthropods into classes(2 marks)

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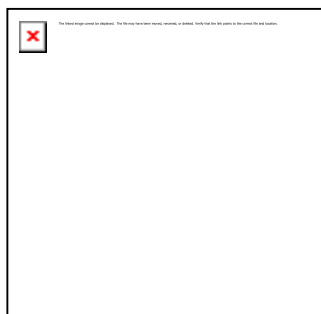
26. Euglena is positively phototactic. Of what biological significance is this characteristics (1 mark)

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27. What is the role of the vascular bundles in plant nutrition? (3 marks)

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28. Study the diagram below which shows part of a mammalian tooth and answer the questions that follow



a) With a reason, identify the tooth (Identity (2 marks)

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Reason

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b) State one adaptation of the tooth to its function (1 mark)

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29. a) What is co-dominance? (1 mark)

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b) Name two disorders in human blood that are caused by gene mutation. (2 marks)

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30. Plants relatively have less waste to excrete than animals. Giving two reasons to explain this Observation. (2 marks)

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