

GATUNDU SUB-COUNTY KCSE REVISION MOCK EXAMS 2015

231/1
BIOLOGY
PAPER I
(Theory)

SCHOOLS NET KENYA

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NAME..... INDEX NO:.....

Candidate's signature.....

Date.....

GATUNDU SUB COUNTY DISTRICT FORM FOUR 2015 EVALUTION EXAMINATION

231/1
BIOLOGY
PAPER I
(Theory)

GATUNDU DISTRICT SECONDARY SCHOOLS EVALUATION TEST
KENYA CERTIFICATE OF SECONDARY EDUCATION

BIOLOGY
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided
- Answer all questions in the spaces provided.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1-30	80	

1. State the importance of each of the following in living organisms. (2 marks)

i) Respiration

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ii) Reproduction

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2. State function of the following in seed. Germination. (3 marks)

i) Water

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ii) Enzymes

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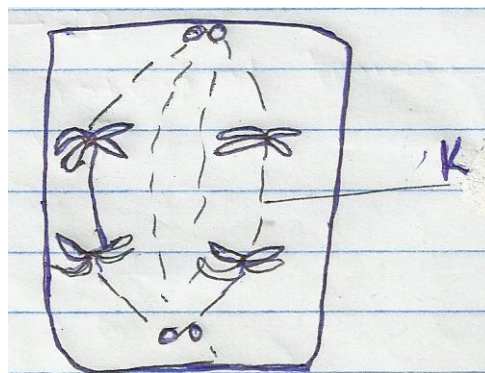
iii) Oxygen

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3. Distinguish between identical twins and fraternal twins. (2 marks)

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4. The diagram below represents a stage during cell division.



i) Identify the stage of cell division. (1 mark)

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ii) Give two reasons for your answer (a) above. (2 marks)

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iii) Name the structures labeled K. (1 mark)

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5. State three roles of Gibberellins hormone in plant. (3 marks)

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6. (i) The diameter field of view of a light microscopic is 6.5mm. Plant cells lying across the diameter are 12. Determine the size of one cell in micrometers. (2 marks)

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(ii) Explain how drooping of leaves on a hot sunny day is advantageous to a plant. (1 marks)

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7. Distinguish between diffusion and osmosis. (2 marks)

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8. State the changes that occur in a nerve axon to produce an action potential. (3 marks)

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9. (i) Name the gaseous exchange surface in insects. (1 mark)

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(ii) State two ways the surface named in (a) above is suited to its function. (2 marks)

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The above equation shows an oxidation reaction of food substances.

a) What do you understand by the term respiratory quotient? (1 mark)

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b) Determine respiratory quotient of the oxidation of food substances. (1 mark)

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c) Identify the food substances. (1 mark)

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11. State one function of each of the following parts of a mammalian ear.

a) Pinna (1 mark)

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b) Tympanic membrane (1 mark)

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c) Vestibule (1 mark)

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12. State one structural and one functional difference between motor and sensory neurones. (2 marks)

- Structural difference –

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- Functional difference –

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13. i) Distinguish between a community and a population (2 marks)

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ii) State two measures that can be taken to control infection of man by protozoan parasites. (2 marks)

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14. i) Pregnancy continues if the ovary of an expectant mother is removed after 4 months. Explain. (2 marks)

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ii) What is the role of testes in the mammalian reproductive system? (2 marks)

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15. i) State two ways in which skeletal muscles fibres are adapted to their function. (2 marks)

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ii) State two structural differences between biceps muscles & muscles of the gut. (2 marks)

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16. a) Explain why Lamarck's theory of evolution is not accepted by biologists today. (2 marks)

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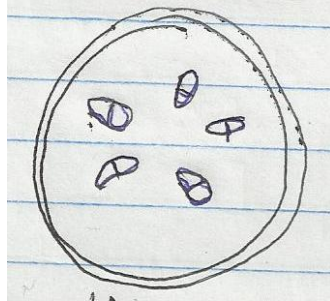
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b) State two pieces of evidence that support the theory of evolution. (2 marks)

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17. The diagram below shows a section through plant organ.



a) (i) Name the class of the section was obtained.(1 mark)

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(ii) Give a reason for your answer in (a) above (1 mk)

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b) What is the role of vascular bundles in plant nutrition? (2 marks)

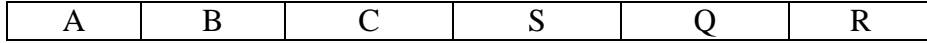
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18. The following is a dental formula of a dog and rabbit, state two differences between them. (2 marks)

Dog:	I $\frac{3}{3}$	C $\frac{1}{1}$	PM $\frac{4}{4}$	M $\frac{2}{3}$
Rabbit:	I $\frac{2}{1}$	C $\frac{0}{0}$	PM $\frac{3}{2}$	M $\frac{3}{3}$

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19. The figure below illustrates a portion of a chromosome with genes named A, B, C, S, Q and R



Use the diagrams similar to the one above to illustrate the changes if the above chromosome undergoes the following mutations affecting only gene C and S.

(i) Deletion (1 mark)

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(ii) Inversion (1 mark)

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20. Name the disease characterized by Glycosuria (2 marks)

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Diuresis (1 mark)

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21. State the importance of each of the following features in animals; (2 marks)

a) Solid food being broken down into small pieces.

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b) Presence of caecum in herbivorous mammals.

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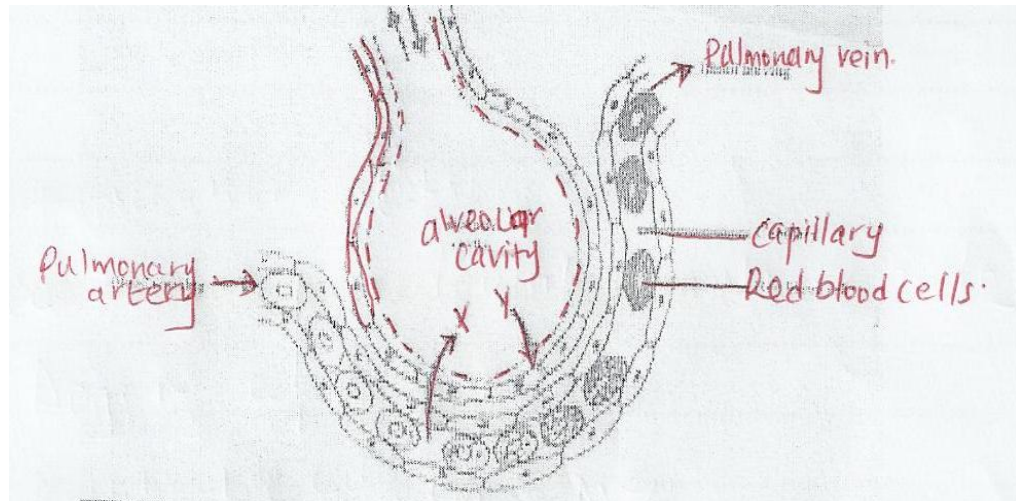
22. Name the substance that accumulates in muscles when respiration occurs with insufficient oxygen. (1 mark)

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23. The diagram below represents gaseous exchange in the alveolus



a) Mention the path followed by gas y from alveolar space until it reaches the red blood cells.

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24. Explain how water from the soil is gained by root hair in plants. (2 marks)

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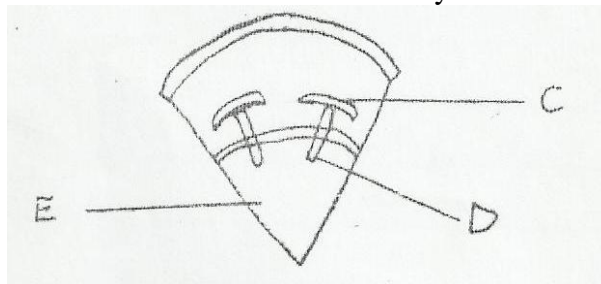
25. In what form is carbon IV oxide transported in blood. (1 mark)

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26. The diagram below shows a section of a dicotyledonous stem.



Name the type of cells found in part labeled E. (1 mark)

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27. State three features that a grasshopper, a crab, a spider and a millipede have in common. (3 mark)

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28. State two characteristics of Eukaryotes. (2 marks)

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29. A cell organelle can be thought of as a “bag” full of “liquid”, the “liquid” being the “background” substance that holds other structures within the “bag”. Distinguish between the “background” substance of a mitochondria and that of a chloroplast. (2 marks)

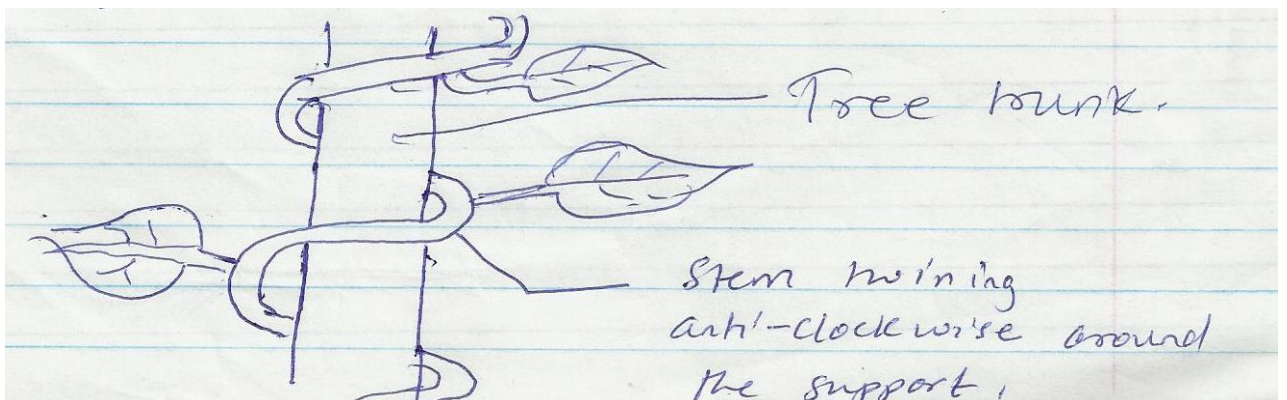
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30. The figure below shows a stem of a plant growing round a tree trunk



a) What is the name of the response which causes such a twisted growth? (1 mark)

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b) Explain how twisting process is accomplished (2 marks)

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