

# MUTITO SUB-COUNTY KCSE REVISION MOCK EXAMS 2015

231/1

BIOLOGY

(THEORY)

PAPER 1

TIME: 2 HOURS

**SCHOOLS NET KENYA**

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NAME \_\_\_\_\_

INDEX NO. \_\_\_\_\_

SCHOOL \_\_\_\_\_

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

**231/1****BIOLOGY****(THEORY)****PAPER 1****TIME: 2 HOURS****MUTITO SUB-COUNTY FORM FOUR JOINT EVALUATION TEST, 2015****Kenya Certificate of Secondary Education (K.C.S.E)**

231/1

BIOLOGY

(THEORY)

PAPER 1

TIME: 2 HOURS

**INSTRUCTIONS TO CANDIDATES**

- Write your name, school and index number in the spaces provided above.
- Sign and write the date in the spaces provided above.
- Answer **ALL** the questions in the spaces provided.
- Additional pages **MUST** not be inserted.
- Candidates may be penalized for false information and even wrong spellings of technical terms.

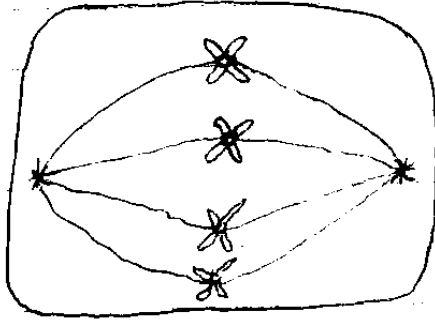
**FOR OFFICIAL USE ONLY**

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 28	80	

*This paper consists of 8 printed pages.*

*Candidates should check to ensure that all pages are printed as indicated and no questions are missing.*

The following cell shows a certain stage in meiotic division. Study it and answer questions that follow.



a) Identify the stage. (1 mark)

b) Name **two** non-disjunction disorders that arise from the stage named in (a) above. (2 marks)

1. State **one** enzyme and **one** hormone secreted by pancreas. (2 marks)

2. Give **two** differences between cones and rods. (2 marks)

Cones	Rods

3. State **two** importance of a synapse. (2 marks)

4. Give **two** functions of exoskeleton in arthropods.

(2 marks)

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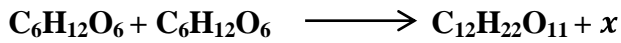


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5. The chemical equation below represents a physiological process that occurs in living things.



a) Name the process represented by the equation above.

(1 mark)

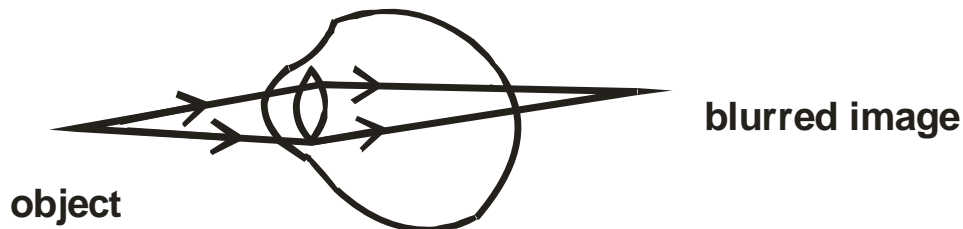
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b) Name substance  $x$ .

(1 mark)

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6. The diagram below represents an eye defect.



a) Name the eye defect.

(1 mark)

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b) Draw a labelled ray diagram to show how the defect may be corrected.

(2 mark)

7. State **one** structured difference between a motor neurone and a sensory neurone.

(2 marks)

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8. State **two** ways in which a mammalian skin undertakes its homeostatic function.

(2 marks)

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9. A mitochondrion magnified 5000 times in an electron microscope, measured 3mm in length.

Calculate the real length of the mitochondrion in micrometers.

(2 marks)

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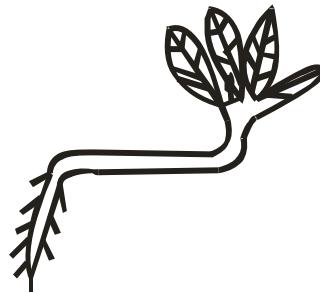


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10. A form 4 student uprooted a young plant and placed it horizontally on the ground on wet cotton wool. After one week it was observed as shown on the diagram below.

*At start*

*After one week*



a) Explain how the response exhibited by the young plant is achieved.

(3 marks)

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b) Explain how use of a clinostat acts as a control for the response being investigated above. (2 marks)

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11. a) State **two** biological evidences of organic evolution.

(2 marks)

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b) What are analogous structures? Give example.

(2 marks)

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12. For each of the following insect hormone identify the site of secretion and state its function.

a) Juvenile hormone

(2 marks)

Site of secretion \_\_\_\_\_

Function \_\_\_\_\_

b) Ecdysone

(2 marks)

Site of secretion \_\_\_\_\_

Function \_\_\_\_\_

13. a) Name the part of a cell where the following occurs.

(2 marks)

i) Glycolysis \_\_\_\_\_

ii) Kreb's cycle \_\_\_\_\_

b) What is the significance of respiratory quotient in living organisms?

(2 marks)

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c) Name **two** neurotransmitter substances.

(2 marks)

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14. a) Name the part of an organelle where the following occurs:

(2 marks)

i) Carbon (IV) oxide fixation \_\_\_\_\_

ii) Photolysis of water \_\_\_\_\_

b) State **two** functions of light in the process of photosynthesis.

(2 marks)

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15. a) Distinguish between tendons and ligaments.

(2 marks)

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b) Name **two** bones that form the pelvic girdle.

(2 marks)

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c) Name the structure on the pelvic girdle that allows entry of blood vessels and nerves.

(1 mark)

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16. Mr. Bob has blood group AB and Mrs. Bob is heterozygous B. Work out the possible blood groups of the likely offsprings.

(4 marks)

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17. a) Explain how the following tissues are adapted in providing mechanical support in plants.(2 marks)

i) Collenchyma

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ii) Sclerenchyma

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b) Name **two** meristematic tissues in woody plants that are responsible for secondary growth.

(2 marks)

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18. State **two** features of petals that enhance pollination by insects.

(2 marks)

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19. Explain why Lamarck's theory is not satisfactory in explaining organic evolution. (2 marks)

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20. Identify the homeostatic and digestive functions of the pancreas and the liver. (4 marks)

Organ	Homeostatic function	Digestive function
Pancreas		
Liver		

21. Distinguish between intraspecific and interspecific competition. (2 marks)

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22. State **two** ways by which the free nitrogen of the atmosphere is converted into a form useful in production by plants. (2 marks)

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23. a) Name a genetic mutation disorder that illustrates a case of incomplete dominance in human beings. (1 mark)

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b) State the survival advantage associated with the trait named in (a) above. (1 mark)

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24. State **two** ways in which the knowledge of plant hormones has been applied in plant husbandry.

(2 marks)

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25. Name **two** structures in mammalian body with ciliated epithelial tissue.

(2 marks)

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26. State the function of the following organelles:

(2 marks)

i) Lysosome

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ii) Nucleous

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27. What name is given to the study of:

i) Organic compounds

(1 mark)

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ii) Parasites

(1 mark)

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