

**KITUI WEST SUB-COUNTIES KCSE REVISION MOCK
EXAMS 2015**

**231/1
BIOLOGY
(THEORY)
PAPER 1
TIME: 2 HOURS**

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NAME _____
SCHOOL _____

INDEX NO. _____
SIGNATURE _____
DATE _____

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KITUI WEST, MATINYANI, MUMONI & TSEIKURU SUB-COUNTIES
FORM FOUR JOINT EXAMINATION, 2015
Kenya Certificate of Secondary Education (K.C.S.E)

231/1
BIOLOGY
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INSTRUCTIONS TO CANDIDATES

- Write your name, school and index number in the spaces provided above.
- Sign and write date of examination 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.
- This paper consists of **8** printed pages.
- Candidates should check to ensure that all pages are printed as indicated and no questions are missing.

FOR OFFICIAL USE ONLY

Question	Maximum score	Candidate's score
1 – 26	80	

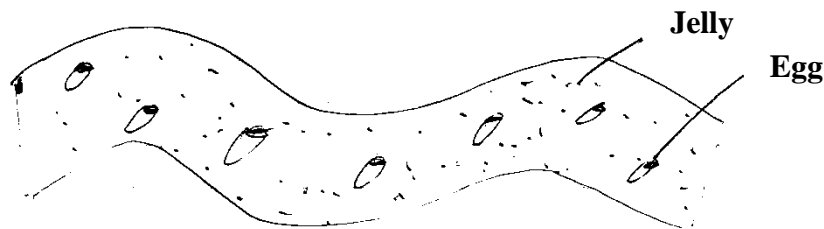
1. State **two** sense organs found in the arthropods for detecting stimuli. (2 marks)

2. a) Which carbohydrate is likely to be:
i) In human liver in large quantities? (1 mark)

- ii) Stored in potato tuber? (1 mark)

- b) Name **two** tissues in plants which are thickened with lignin. (2 marks)

3. The diagram below shows the eggs of a certain amphibian.



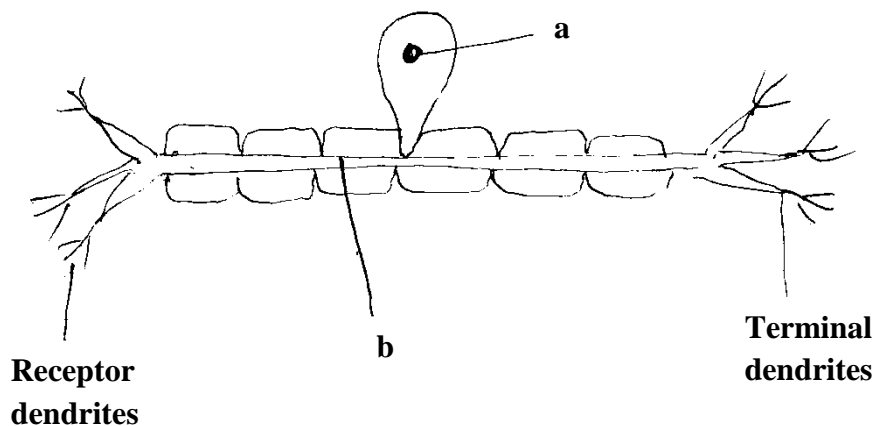
- a) State the functions of the jelly. (3 marks)

- b) What is the biological importance of the organism laying many eggs? (1 mark)

4. State **two** functions of aerenchyma tissue in water plants such as water lily. (2 marks)

5. a) Where in the human body are relay neurones found? (1 mark)

b) The diagram below represents a neurone.



i) Name the neurone. (1 mark)

ii) Name the parts labelled **a** and **b**.

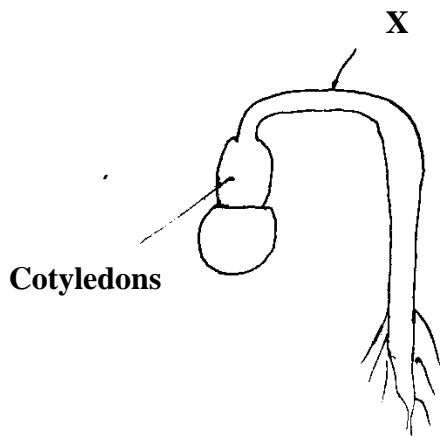
a _____ (1 mark)

b _____ (1 mark)

c) On the diagram, show the direction of the impulse conduction by use of an arrow. (1 mark)

6. Distinguish between excretion and homeostasis. (2 marks)

7. The diagram below represents a stage during germination of a seed.



a) Name the type of germination illustrated in the diagram. (1 mark)

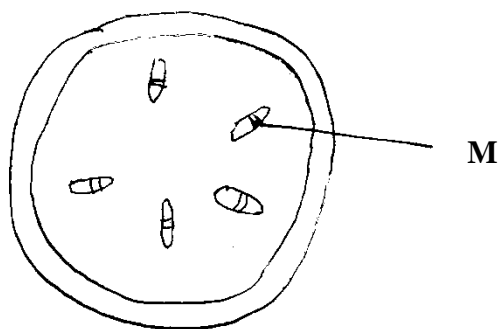
b) Name the part labelled X. (1 mark)

c) Explain how the seedling straightens .

(2 marks)

8. State **two** reasons why plants lack complex excretory organs such as those found in animals. (2 marks)

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



a) i) Name the class of the plant from which the section was obtained.

(1 mark)

ii) Give a reason for your answer in a i) above.

(1 mark)

b) State the function of the part labelled M.

(1 mark)

10. Give **three** characteristics of meristematic cells.

(3 marks)

11. Define the following terms and give an example in each case.

a) i) Homologous structures

(1 mark)

ii) Example

(1 mark)

b) i) Analogous structures

(1 mark)

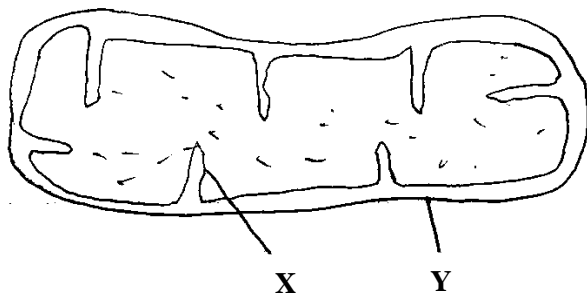
ii) Example

(1 mark)

12. State **three** ways in which the trachea of a man is adapted to perform its functions.

(3 marks)

13. The diagram represents a cell organelle.



a) Identify the cell organelle.

(1 mark)

b) Give the names of the parts labelled X and Y.

X _____ (1 mark)

Y _____ (1 mark)

c) Name **two** types of cells in humans beings in which the organelle named in 'a' above are found in large numbers.

(2 marks)

14. a) State **three** roles of active transport in human body.

(3 marks)

b) Explain why active transport can only take place in the living tissues.

(1 mark)

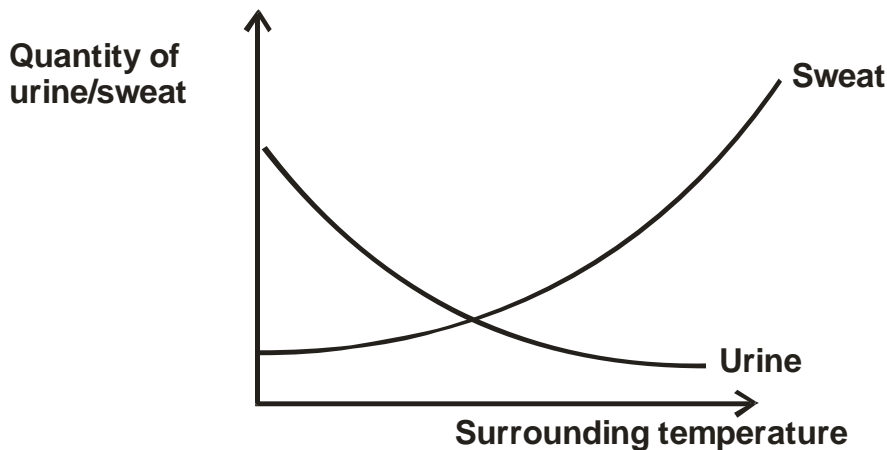
15. a) State **two** ways in which fungi are harmful to man.

(2 marks)

b) How do the fungi differ from plants nutritionally?

(1 mark)

16. The graph below shows the variations in the amount of sweat and urine with temperature in human beings.



a) How does the increase in temperature affect:

i) Urine production?

(1 mark)

ii) Sweat production?

(1 mark)

b) State **two** conditions under which human beings pass little volumes of concentrated urine. (2 marks)

17. List **three** functions of blood plasma.

(3 marks)

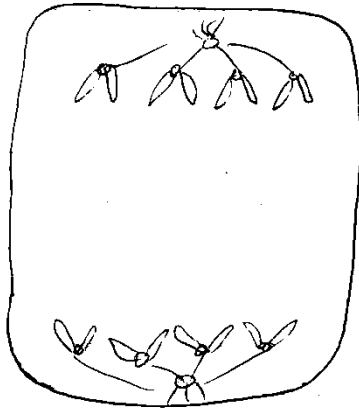
18. a) Define the term accommodation as used in the mammalian eye?

(1 mark)

b) Explain what happens to iris during accommodation in dim light.

(2 marks)

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



a) State the type of cell division.

(1 mark)

b) i) Identify the stage of the cell division.

(1 mark)

ii) Give a reason for your answer in b) i) above.

(1 mark)

20. State **two** factors within the seed that cause seed dormancy.

(2 marks)

21. a) What is nitrogen cycle?

(1 mark)

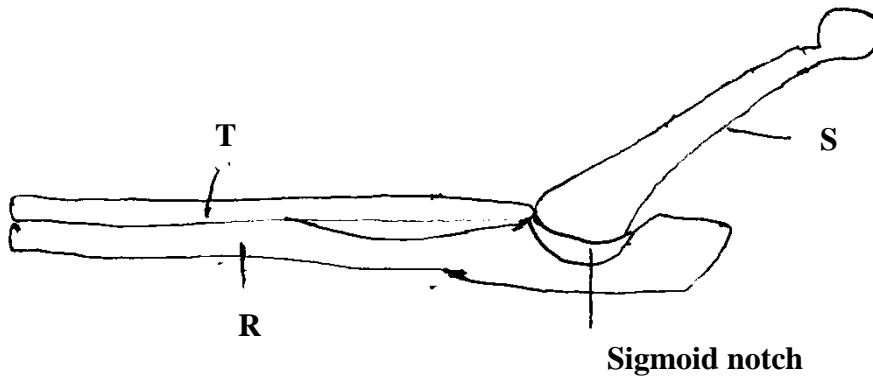
b) Name the denitrifying bacteria.

(2 marks)

c) What is the role of rhizobium bacteria in the nitrogen cycle?

(1 mark)

22. The diagram below shows how specimen S articulates with bones T and R.



a) Identify the bones labelled R, T and S. (3 marks)

R _____

T _____

S _____

b) Name the type of joint which exists when the bones articulate at the sigmoid notch. (1 mark)

23. Explain how the fallopian tubes in the female reproductive system are adapted to their function. (3 marks)

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

25. What is meant by the following terms?

a) Hypogynous flower. (1 mark)

b) Pistillate flower. (1 mark)

26. What is an allele? (1 mark)
