

Name: Index no

School: Candidate's sign

Date:

231/1
BIOLOGY
PAPER 1
JULY/AUGUST 2011
TIME: 2 HOURS

NYAMIRA DISTRICT JOINT EVALUATION TEST

Kenya Certificate of Secondary Education (K.C.S.E.)

**Biology
Paper 1**

INSTRUCTIONS TO CANDIDATES:

- Write your **name** and **index number** in the spaces provided.
- Sign and write **date** of examination in the spaces provided above
- Answer **all** the questions in section **A** and **B**

For Examiner's Use Only:

QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
1- 28	80	

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

1. The study of internal structures of living organisms is called ?

.....

2. Name the structure that joins bones together at the joint. (1 mk)

.....

3. Which carbohydrate is likely to be;
(i). In human liver in large quantities? (1 mk)

.....

(ii). Stored in potato tuber. (1 mk)

.....

4. Name **two** tissues in plants which are thickened with lignin. (2mks)

.....

.....

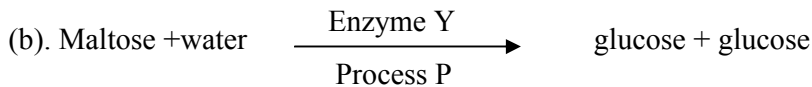
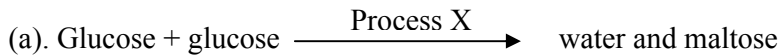
5. Differentiate between; fats and oils.
(i). Fats- (1mk)

.....

(ii). Oils (1mk)

.....

6. Use the equation below to answer questions that follow.



i. Name enzyme **Y** (1mk)

.....

ii. Process **X**. (1mk)

.....

iii. Process **P**. (1mk)

.....

7. Identify the responses indicated below;
i. Euglena swims towards light. (1mk)

.....

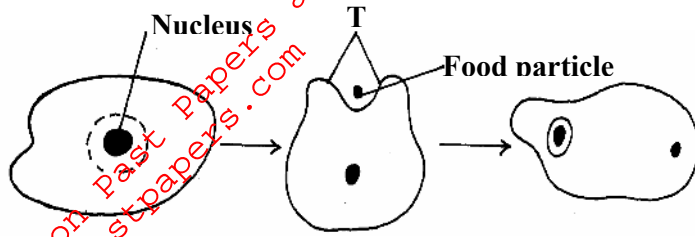
ii. A root tip grows towards gravity. (1mk)

.....

iii. *Mimosa pudica* leaves collapse when stroked. (1mk)

.....

8. The diagram below shows a feeding process in an organism.



a. Name structure **T**. (1mk)

b. What type of nutrition is shown on the diagram? (1mk)

Name **one** organism that feeds using the type of nutrition in (b) above. (1mk)

9. What is meant by;
a. Organic evolution. (2mks)

b. Adaptive radiation. (2mks)

10. Name the parts of a light microscope which perform each of the following functions. (1mk)

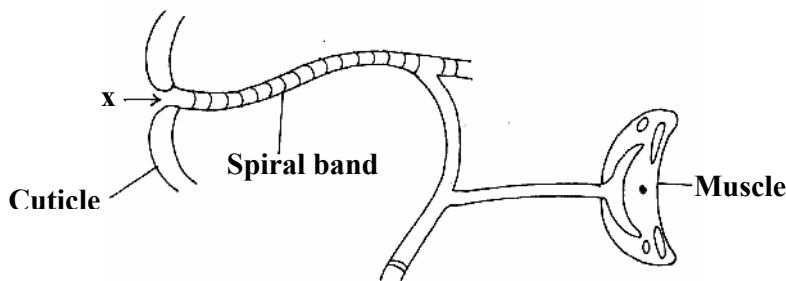
i. Controlling the amount of light entering the specimen. (1mk)

iii. Used for focusing image under low power. (1mk)

11. State **two** functions of the aerenchyma tissue in water plants such as water lilies. (2mks)

12. How is the buccal cavity of an amphibian adapted for gaseous exchange? (2mks)

13. The diagram below shows the tracheal system of an insect.



a. Name structure X (1mk)

b. State the role of the spiral band on the trachea. (1mk)

c. How is ventilation maintained in the trachea system? (1mk)

14. Distinguish between diabetes mellitus and diabetes insipidus. (2mks)

15. Name the causative agent of the following diseases.
a. Cholera. (1mk)

b. Amoebic dysentery. (1mk)

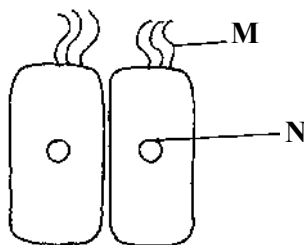
16. The table below shows composition of urine in a certain animal.

Material	Plasma concentration in g/l	Glomerular filtrate concentration in g/l	Urine concentration
Protein	80	0	0
Inorganic ions	7	7	15
Glucose	1	1	0
Urea	0.3	0.3	20
Amino acids	0.5	0.5	0

a. Account for;
Absence of proteins in glomerular filtrate although it's present in large amounts in the plasma. (2mks)

b. Very high concentration of urea in urine yet it's concentration is low in plasma and in glomerular filtrate.

17. The diagram below shows a type of epithelial tissue.



a. Name the parts labelled M and N. (2mks)
M.....
N.....

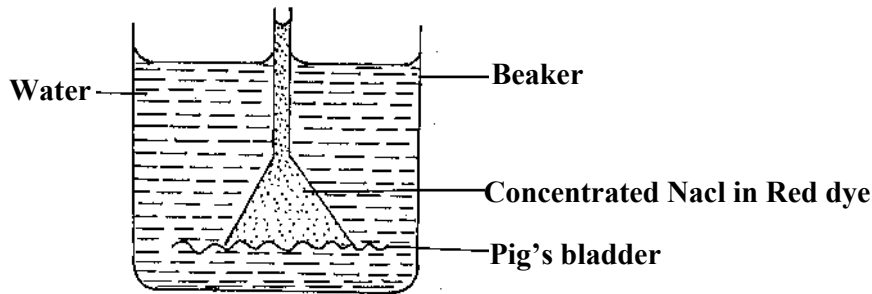
b. State function of structures labelled **M**. (1mk)

c. Name **one** part of the body where **M** can be found. (1mk)

18. State **three** ways in which energy is lost across the food chain from one organism to the next. (3mks)

19. State **three** conditions necessary for germination of seeds. (3mks)

20. The diagram below represents an experimental set up. The set up was left for two hours. The level of the solution in the funnel increased while the red dye was seen in the beaker.



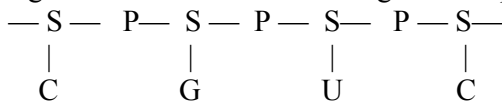
a. Identify the process that led to;
i. Increase in the solution level in the funnel. (1mk)

ii. Appearance of red dye in the beaker. (1mk)

b. State the role of the pig's bladder. (1mk)

21. List down **two** factors that bring about variations. (2mks)

22. 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. (1mk)

Reason. (1mk)

23. Name **two** regions in higher plants where cells actively undergo mitosis. (2mks)

24. Giving a reason in each case, name the class to which each of the following organisms belong. (1mk)

a. Bean plant

Reason

b. Bat

Reason.

25. a) List ~~three~~ **three** roles of gibberellins in plants

b) Name the hormone that causes flowering.

26. What is the importance of seed dispersal?

27. Explain the role of the following features on xerophytes.

i. Succulent stem and leaves.

ii. Short life cycle

28. Name the cell organelle that would be abundant in cardiac muscles.