

MOI GIRLS SECONDARY SCHOOL - KAMANGU

NAME..... ADM NO.....CLASS.....

231/1

BIOLOGY (Theory)

FORM 3

END OF TERM 3 - 2024

TIME: 2 Hours

Instructions to Candidates:

- a) Write your name and Admission number in the spaces provided above.
- b) Sign and write the date of examination in the spaces provided above
- c) Answer **ALL** the questions in the spaces provided below each question.
- d) Answer **all** the questions in the spaces provided.
- e) All working **MUST** be clearly shown where necessary.
- f) This paper consists of 10 printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiner's Use Only

Questions	Max. Score	Candidate's Score
1 – 22	80	

1. Define the following terms
 - i) Inter specific competition 1mk
 - ii) Carrying capacity 1mk

2. *Plasmodium ovale* and *plasmodium falciparum* are transmitted by mosquito
 - a) Identify the mistake made in writing the scientific name 1mk
 - b) Can the above organisms interbreed? Give reason. 2mks

3. Below is a dental formula of certain organism. use it to answer the question that follows:-

i $\frac{0}{3}$ c $\frac{0}{1}$ *pm* $\frac{3}{2}$ *m* $\frac{3}{3}$

 - i) Calculate the total number of teeth in the Mouth of the organism 1mk
 - ii) Name the Organism 1mk
 - iii) Identify the mode of nutrition of the organism 1mk

4. Explain what happens during the darks stage of photosynthesis 2mks

5. List **three** characteristics of a population 3mks

6. What characteristics of organisms is described below:

a) A cat giving birth to kittens and eating them. (2marks)

b) A boy running to class at the sound of a bell. (2marks)

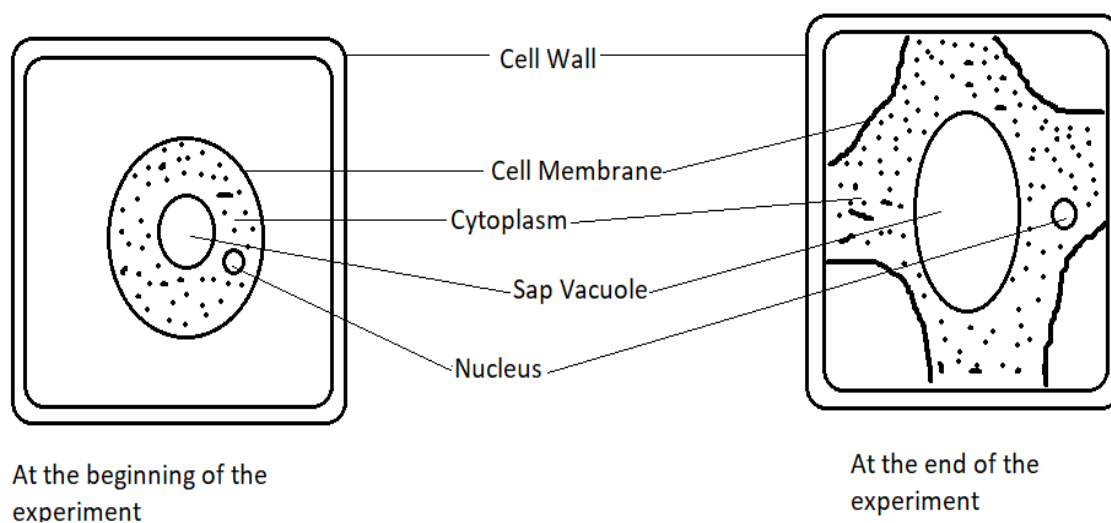
7. The diagram below represents an apparatus used to collect specimen for study.



a) Identify the apparatus. (1mark)

b) Name one specimen where the use of the apparatus is recommended. (1mark)

8. Below is a plant cell that was immersed in solution K. study it and answer the questions that follows.

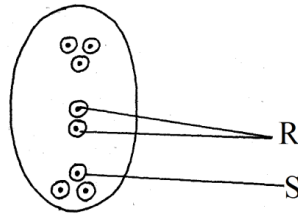


- a) State the nature of solution K. (1mark)
- b) Account for the observation made at the end of the experiment. (2marks)
- c) State the term given to the process that resulted to the observation. (1mark)

9. (a) Explain the role of oxygen in active transport. (1mark)

- b) Name **two** processes that depend on active transport in animals. (2marks)

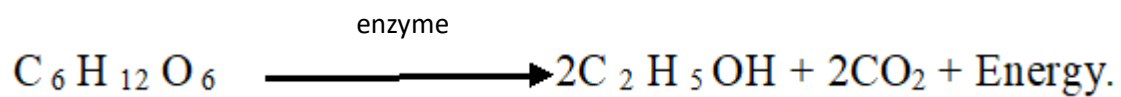
10. Study the diagram of the embryo sac below and answer questions that follow.



a) Name the type of fertilization that occurs in the embryo sac. (1mark)

b) What do the structure labelled R and S develop into after fertilization. (2marks)

11. 1. The process that occurs in plants is represented by the equation below:



a) Name the process (1mk)

b) State two economic importance of the named process in (a) above. (2mks)

12. Name two nerves that control the rate of heartbeat (2mks)

13. A doctor performing an operation cut two blood vessels by mistake. He notices that from one of the blood vessels, blood spurts out while from the other, blood flows out steadily.

(a) Identify the type of each blood vessel in which;

(i) Blood spurts out (1mk)

(ii) Blood flows smoothly (1mk)

(b) Give a reason for your answer in (a) above (2mks)

14. Give reasons why muscle cells, sperm cells and kidney cells have large numbers of mitochondria.

(2mks)

(b) State the role of cristae found in the mitochondria. (1 mk)

15. State how xylem vessel is adapted to its function (2mks)

16. Define the term immunity. (1mk)

b) Distinguish between natural immunity and acquired immunity. (1mk)

c) Identify two immunizable diseases in Kenya. (2mk)

d) Give a reason why active immunity is advantageous.

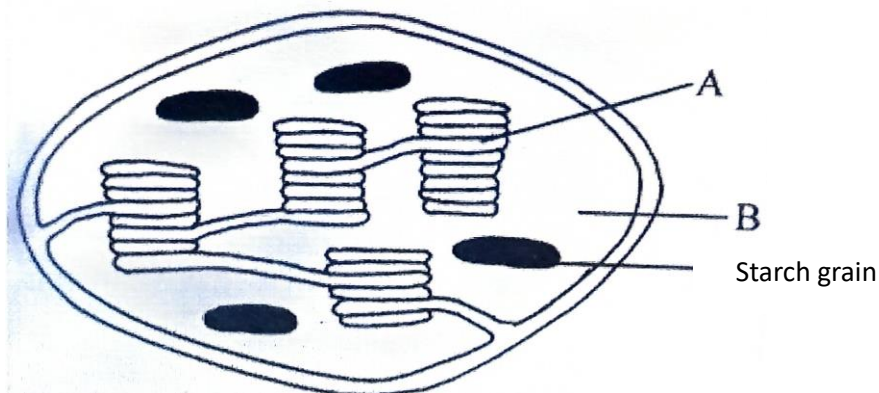
(1mk)

e) Josephine had an accident leading to damaged tissue and the medical doctors advised for use of auto grafts but not xenograft for an operation to replace damaged tissue.

Explain.

(2mks)

17. The diagram below represents a plant cell organelle;



a) Name the organelle

(1mk)

b) In which of the labeled parts does carbon(IV)oxide fixation occur?

(1mk)

c) Name the parts labeled A and B and state their functions

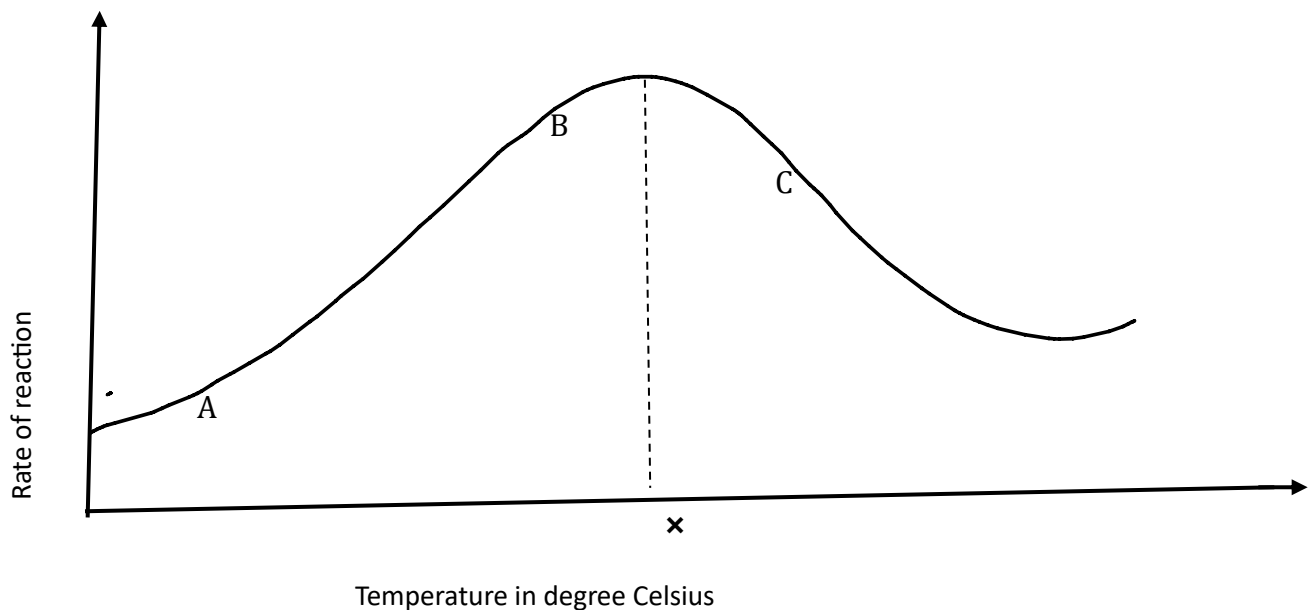
(4mks)

A _____

B _____

d) Explain what would have happened to the starch grain had the plant been kept in darkness for 48 hours under starch test done. (2mks)

18. The Figure below shows the effect of temperature on an Enzyme – catalyzed reaction



a) Account for the shape of the graph;

i) Between points A and B.

2mks

ii) Beyond C

2mks

b) What is point X

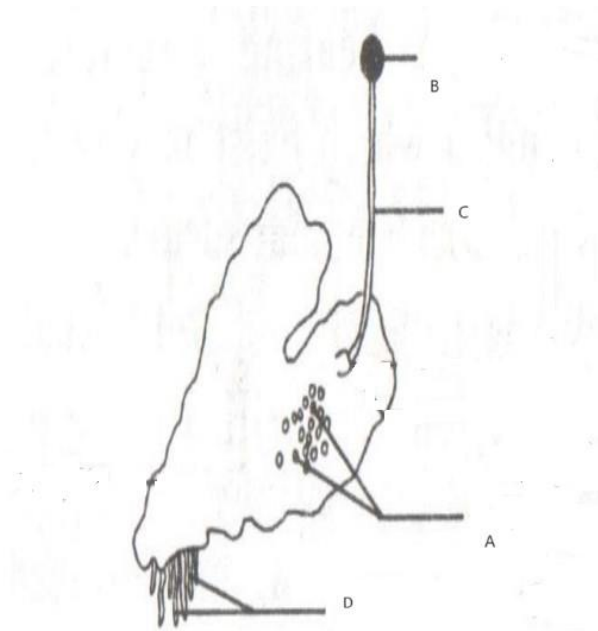
1mk

c) Name two other factors that affect the enzymes catalyzed reaction

2mks

d) State the enzyme found in living tissues that breaks down hydrogen peroxide 1mk

19. The Diagram below represents a certain organism observed by a student in an ecological tour



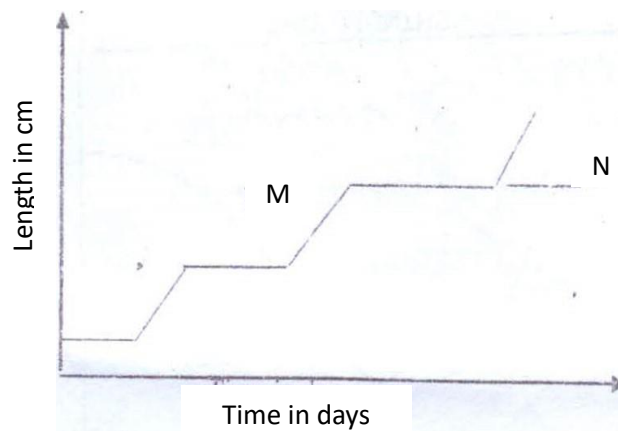
a) Name the parts labeled C and D 2mks

C.....D.....

b) Name the division to which the organism belongs 1mks

c) Give the observable reason for your answer in (b) above 2mks

20. The diagram below represents growth patterns in a certain group of animals. Study it and answer the questions that follow.



- a) What name is given to such a growth pattern as shown above? (1 mark)
- b) Suggests the animal, phylum whose growth pattern is represented (1 mark)
- c) Name the process that occur in each of the parts labelled. (2 marks)

21. Name the structure used for locomotion by the following organisms:

(a) Euglena (1mk)

(b) Paramecium (1mk)

22. Name the excretory products in the following organisms:

(i) Fresh water fish (1mk)

(ii) Birds (1mk)

(iii) Humans (1mk)