

NAME INDEX NO

SCHOOL SIGN DATE

Biology
231/1
Paper 1
2 hours

**CATHOLIC DIOCESE OF KAKAMEGA EVALUATION TEST
JULY/AUGUST, EXAM 2025**

Instructions to candidates

- (a) Write your **Name, school and index number** in the spaces provided above.
- (b) Sign and write the date in the spaces provided.
- (c) Answer **all** questions in the spaces provided.
- (d) Candidates should answer questions in English.

Wrong Spelling of Technical Terms shall be penalized

- (e) This paper consists of 8 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

For examiners use only

Questions	Maximum score	Candidate's score
1-27	80	

1. Name a characteristic of living things displayed by;
a) A cow drinking water (1 mark)

.....

b) An athlete panting after a race (1 mark)

.....

c) A lioness chasing a gazelle (1 mark)

.....

2. a) State two regions in a plant where the end products of photosynthesis are translocated (2marks)

.....

.....

b) With reference to circulatory system only, give two reasons why birds and mammals are more active compared to other organisms (2marks)

.....

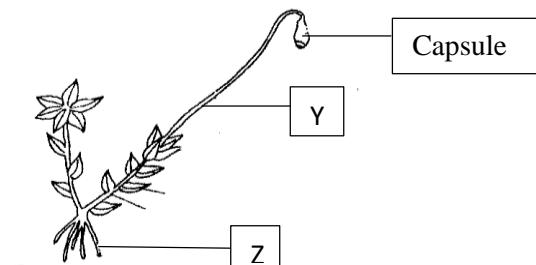
.....

3. a) What two characteristics are used to divide Phylum Arthropoda into classes (2marks)

.....

.....

b) The diagram below shows an organism from Kingdom Plantae. Study it and answer the questions that follow.



i) Identify the division from which the plant was obtained (1mark)

.....

ii) Name the part labelled Y (1mark)

.....

iii) State one function of the part labelled Z (1mark)

.....

4. a) Give a reason why a virus is considered non -living (1mark)

.....

b) Name two viral diseases in humans (2marks)

.....

.....

5. Most terrestrial plants do not grow well in waterlogged soils. Give a reason for this (1mark)

.....

6. a) Name the two main components of the cell membrane (2marks)

.....

.....

b) Name the organelle that is likely to be found in abundance in:

(i) an enzyme secreting cell (1mark)

.....

(ii) Cells producing lipid related secretions (1mark)

.....

(iii) Areas where the cells have ruptured (1mark)

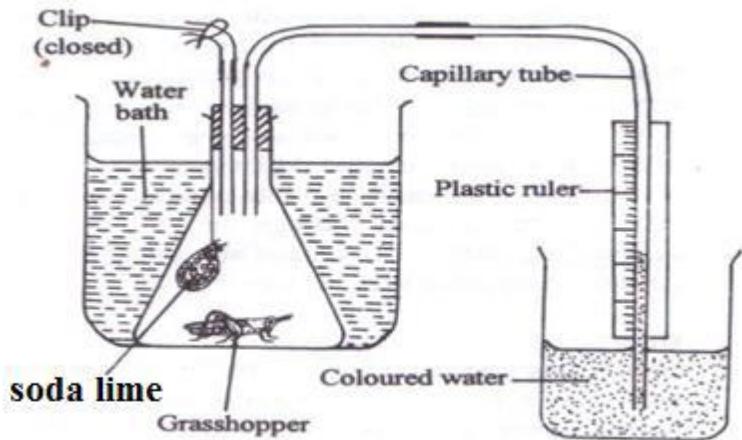
.....

7. Explain how biconcave shape of red blood cells relate to their function (2marks)

.....

.....

8. The diagram below illustrates an experiment to determine the rate of a certain process in a small insect.



(a) State the changes observed after the experiment has run for five minutes. (1 mark)

.....
.....

(b) Why is it necessary to place the flask in a water bath? (1 mark)

.....
.....

(c) Name the organelle involved in the process under investigation and the significance of this process. (2 marks)

.....
.....

9. A small boy remarked that his dog looks larger on cold days than on hot days. Give a biological explanation for this (2marks)

.....
.....

10. Name a method that could be used to estimate the population size of the following organisms

(a) Fish in a pond. (1mark)

.....
.....

(b) Kikuyu grass in a garden (1mark)

.....
.....

c) Antelopes in a game park (1 mark)

.....
.....

11. Name the eye defect corrected by (3marks)

i). Using bifocal lens

.....
.....

ii). Wearing special cylindrical lens

.....

iii). Surgical replacement of the lens

.....

12. A student tested for food substances in a given solution and observed the following:

i) Benedict's test; brown -orange colour

ii) Iodine test; No colour change

a) Identify the food substance present (1mark)

.....

b) Explain your answer (2marks)

.....

.....

13. Name the hormones involved in the following processes

a) Regulation of blood sugar level (1mark)

.....

b) Water balance in the body (1mark)

.....

c) Female secondary sexual characteristics (1mark)

.....

14. A student carefully cut open a maize seed and a bean seed to examine their internal structures. List any three observable differences between the two seeds. (3marks)

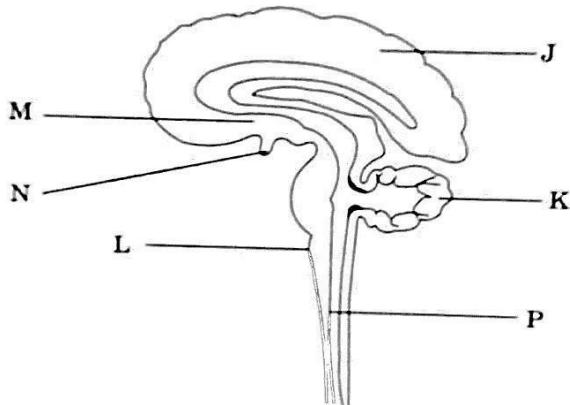
.....

.....

.....

.....

15. The diagram below shows a vertical section through the human brain.



a) Name the part labelled K (1mark)

.....

b) State why the part labelled J is large and highly folded (1mark)

.....

c) Give the letter on the diagram which

(i) Serves as endocrine organ (1mark)

.....

(ii) Control breathing rate, cardiac frequency, salivation and hearing (1mark)

.....

16. Explain how the following occur during gene mutation

(i) Substitution (1mark)

.....

(ii) Insertion (1 mark)

.....

17. (a) What are meristems? (1mark)

.....

.....

(b) (i) What is the role of cork-cambium in secondary growth? (1mark)

.....

.....

(ii) Name the meristem that is responsible for increase in length of stems (1mark)

.....

18. State two functions of the spleen (2marks)

.....
19. Name the excretory products eliminated by the following animals

(i) Tilapia (1mark)
.....

(ii). Chicken (1mark)
.....

20. State the functions of the following parts of the human ear

(a) Ossicles (1mark)
.....

(b) Pinna (1mark)
.....

21. a) Name the causative organism of the following diseases

(i) Malaria (1mark)

(ii) Bilharzia (1mark)
.....

b) Identify the part of the light microscope which serves each of the functions described below

(i) Making rough focus (1mark)
.....

(ii) Reflecting light from the source (1mark)
.....

22. a) State two characteristics of aerenchyma tissue (2marks)

.....
.....

b) What is the significance of transpiration in plants? (3marks)

.....
.....

.....

23. State two ways in which Xylem vessels are adapted to their functions (2marks)

.....

.....
.....
.....
.....

24. Distinguish between convergent and divergent evolution (2 marks)
.....
.....
.....

25. Give one function of blood as a tissue (1 mark)
.....

26. A form two student set up an experiment to investigate osmosis using a visking tubing filled with sugar solution and placed in water.
a) What results would be expected after 30 mins (1 mark)
.....
.....
.....
.....
b) Explain the observation (2marks)
.....
.....
.....
.....

27. a) State two differences between a food chain and a food web. (2marks)
.....
.....
.....
.....
b) Explain how the following adaptations increase survival
i) a chameleon changing its skin colour (1 mark)
.....
.....
.....
.....
ii) long loops of Henle in desert mammals (1mark)
.....
.....
.....
.....