

Name.....

ADM No.....

School.....

Candidate's signature.....

Date.....

231/1  
Biology  
Paper 1  
Form four

**SCHOOL BASED FORM 4 COMMON EXAM**

**BIOLOGY  
PAPER 1  
(THEORY)**

**TIME: 2 HOURS**

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Questions	Maximum Score	Candidate Score
1-28	80	

Answer all the question in spaces provided marks are indicated.

1. Name the type of skeleton in:-

(i) Grasshopper \_\_\_\_\_ (1mk)

(ii) Man \_\_\_\_\_ (1mk)

2. Name the phylum whose members possess notochord. (1mk)

\_\_\_\_\_

3. How is aerenchyma tissue adapted to its function. (2mks)

\_\_\_\_\_  
\_\_\_\_\_

4. Give the structure of the cells that perform the following functions;

a) Synthesis of ribosomes (1mk)

\_\_\_\_\_

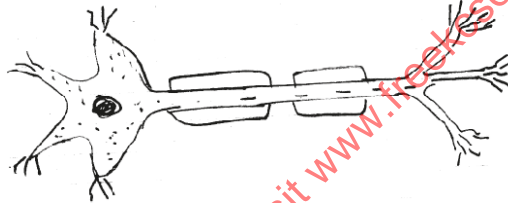
b) Regulate exchange of substances in and out of the nucleus. (1mk)

\_\_\_\_\_

c) Breakdown large molecules, destroy worn out organelles. (1mk)

\_\_\_\_\_

5. Below is a diagram of the structure of a neurone.



a) With a reason identify the neurone (2mks)

\_\_\_\_\_  
\_\_\_\_\_

(b) What is the function of the neurone named above? (1mk)

\_\_\_\_\_

6. State **three** adaptations of phloem to its function. (3mks)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. a) i) What is meant by a vestigial structures? (1mk)

\_\_\_\_\_  
\_\_\_\_\_

ii) Give an example of a vestigial structure in human (1mk)

\_\_\_\_\_

b) Explain why resistance to certain drugs in curing a disease is natural selection in action?

(2mks)

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8. a) Name one salivary gland in humans.

(1mk)

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(b) State two functions of saliva

(2mks)

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9.(a) State the roles of enzymes catalase in living cells.

(1mk)

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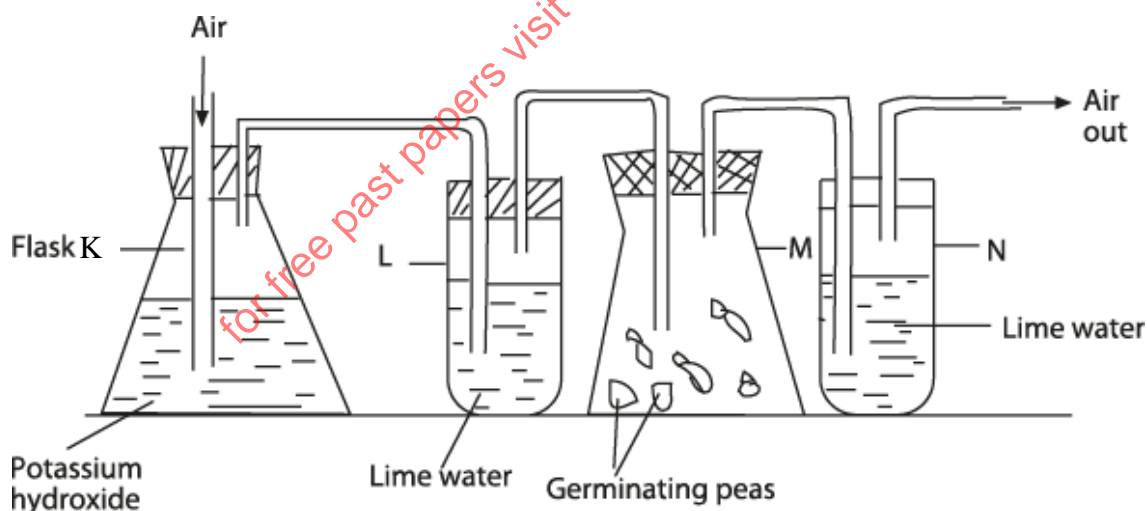
b) Which factor inactivate enzyme?

(1mk)

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10. The diagram below represents a set-up that students used in an investigation.



a) Name the physiological process that was being investigated?

(1mk)

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b) State the role of potassium hydroxide in flask K?

(1mk)

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c) Give reasons for the observation in boiling tube L and flask N. (2mks)

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

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12. Give the meaning of the following terms as used in ecology:

i) Synecology (1mk)

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ii) Carrying capacity (1mk)

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iii) Population (1mk)

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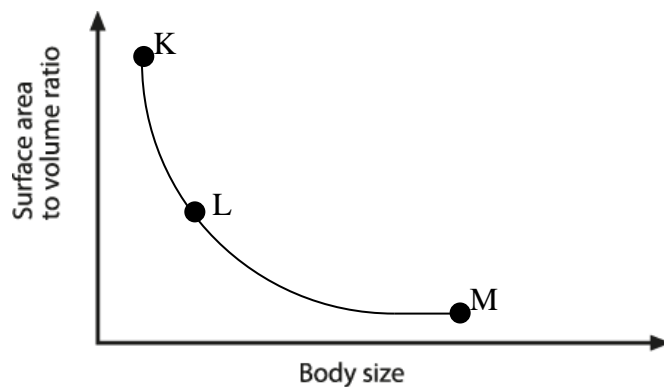
13. Explain how sunken stomata lower the rate of transpiration. (2mks)

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14. The graph below shows relationship between body size and surface area to volume ratio of three animals K, L, M found in the same habitat.



a) State the relationship between the body size and the surface area to volume ratio. (1mk)

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b) i) Which of the three animals is likely to have the simplest transport system. (1mk)

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ii) Give reasons to your answer in b(i) above (2mks)

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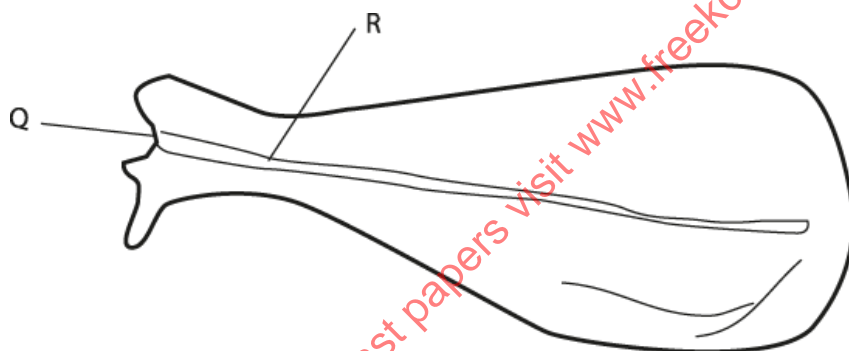
15. List the salient characteristics of class aves. (3mks)

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16. The diagram below represents a bone obtained from a mammal;



a) Name the bone. (1mk)

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b) Name the:

i) bone which articulates with the bone named in (a) above at cavity labelled Q (1mk)

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ii) Joint formed by the two bones. (1mk)

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c) How is the bone adapted to its function. (2mks)

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17. State two structural differences between the glomeruli of a desert mammal and a fresh water fish. (2mks)

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18. State two functions of the choroid in the human eye (2mks)

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19. A student drew a 5cm long diagram of a plant flower. If the actual length of flower was 10cm calculate the magnification of the drawing made by students. Show your working. (3mks)

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20. Hemophilia is sex-linked trait. It is caused by a recessive gene on the X-chromosome. Using the symbol H – to represent the normal gene and h to represent the gene for hemophilia work out the following; The phenotypes of children born to or normal man and carrier woman. (5mks)

21. State the importance of the following features in gaseous exchange.

(a) Presence of cartilage in trachea.

(1mk)

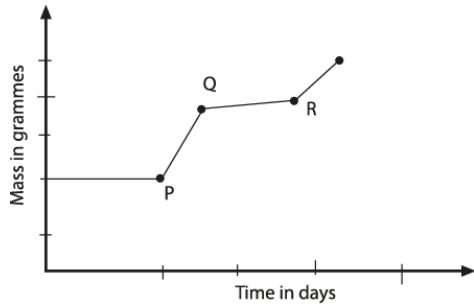
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b) Large surface area of the lungs.

(1mk)

22. The graph below shows a sketch of the growth of an insect.



i) Name the type of growth represented by the curve shown above.

(1mk)

ii) Give reasons for the steps of the curve between;

P and Q

(1mk)

Q and R

(1mk)

23. Give the role of the following parts of the male reproductive system.

(3mks)

a) Epididymis

b) Prostrate gland.

c) Scrotum

24. State two functions of the cerebrum of the brain.

(2mks)

25. State three industrial application of anaerobic respiration.

(3mks)

26. Give two reasons why productivity in the aquatic ecosystem decrease with depth. (2mks)

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27. What causes seed dormancy in a seed. (2mks)

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28. a) Name the factor that enhance water re-absorption in the distol convoluted tubule. (2mks)

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b) Name three nitrogenous waste found in urine. (3mks)

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