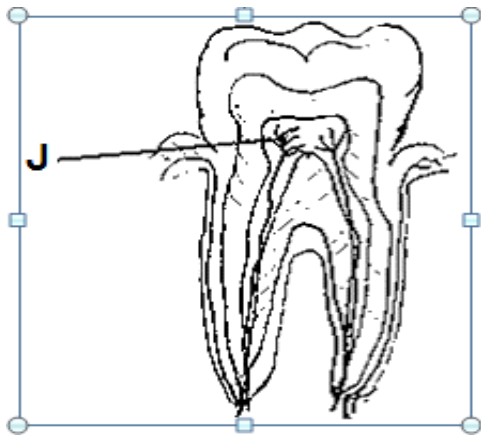


FORM FOUR CLUSTER KCSE MODEL 2

BIOLOGY PAPER 1 QUESTIONS

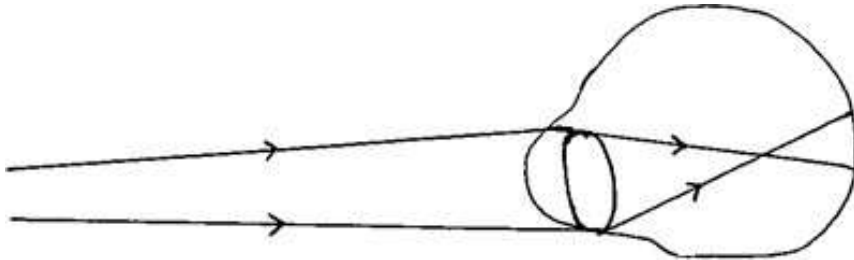
- Name the tissues in plants responsible for:
 - Transport of water and mineral salts (1 mark)
.....
 - Transport of carbohydrates (1 mark)
.....
 - Primary growth (1 mark)
.....
- What is meant by non-disjunction (1 mark)
.....
 - Give two examples of continuous variations in humans. (2 marks)
.....
.....
- Give three factors that determine the amount of energy a human being requires in a day.
.....
.....
- Plant cells do not burst when immersed in distilled water. Explain.
.....
.....
- The diagram below represents a section through a human tooth.



- (i) Name the type of tooth shown. (1 mark)
.....
 - Give a reason for your answer in a (i) above. (1 mark)
.....
- a) Name a vitamin manufactured by the human body. (1 mark)

.....
b) State two functions of sodium ions in the human body. (2 marks)
.....
.....

7. The diagram below shows the position of an image formed in a defective eye.



a) Name the defect. (1 mark)
.....

b) Explain how the defect named in (a) above can be corrected. (2 marks)
.....
.....

8. During germination and early growth the dry weight of the endosperm decreases while that of the embryo increases.

Explain
.....
.....
.....

9. Besides the abdomen name the other part of members of class Arachnida.
.....

10. Explain why the carrying capacity for wild animals is higher than that for cattle on a given piece of land.
.....
.....

11. State three ways by which plants compensate for lack of ability to move from one place to another.
.....
.....
.....

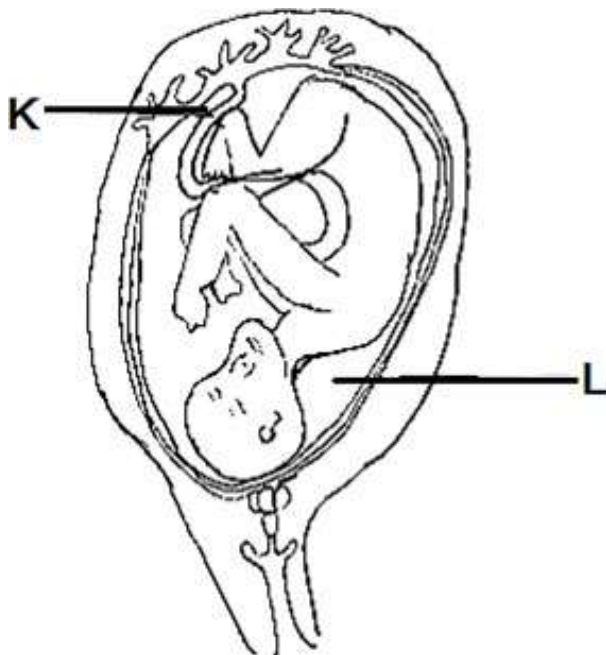
12. In a breeding experiment plants with red flowers were crossed. They produced 123 plants with red flowers and 41 with white flowers

a) Identify the recessive character. (2 marks)
.....

Give a reason
.....

b) What was the genotypes of the parents that gave rise to the plants with red and white flowers. (1 mark)
.....

13. The diagram below represents a stage in the development of human foetus.



a) State the functions of each of the structures labeled K and L.

K (2 marks)

.....

L (2 marks)

.....

b) What advantage do embryos that develop within the body of parents have over those that develop outside.

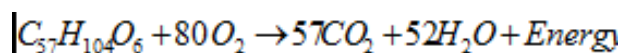
(1 mark)

.....

14. Name the region of the gut in herbivorous mammals where digestion of cellulose takes place.

.....

15. The oxidation of a certain fat is represented by the chemical equation shown below.



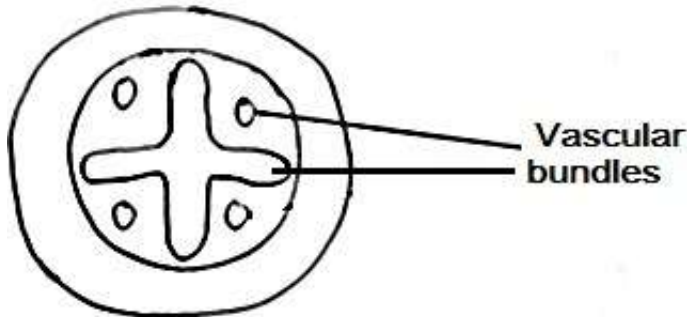
a) Calculate the respiratory quotient (RQ) of the fat. (2 marks)

.....

b) Give two reasons why fats are rarely oxidized. (2 marks)

.....
.....

16. The diagram below represents a cross section through certain part of a flowering plant.



a)(i) Identify the part of the plant from which the cross section was made. (1 mark)

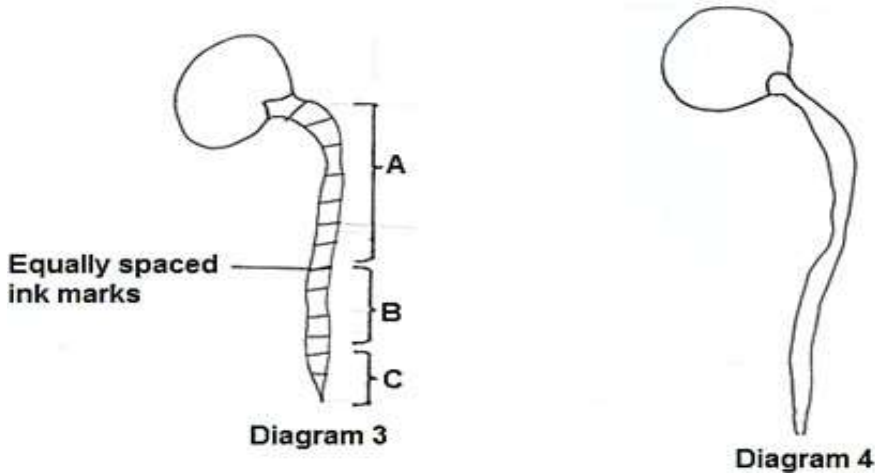
.....

(ii) Give a reason for your answer in a (i) above. (1 mark)

.....

b) In the diagram shade the region which would be stained with a dye if the plant was left to stand in a solution of the dye for some time before the section was made. (1 mark)

17. Diagram 3 represents a germinating seedling whose radicle has been marked at equal intervals using a water-proof ink.



a) Name the regions labeled A, B and C. (3 marks)

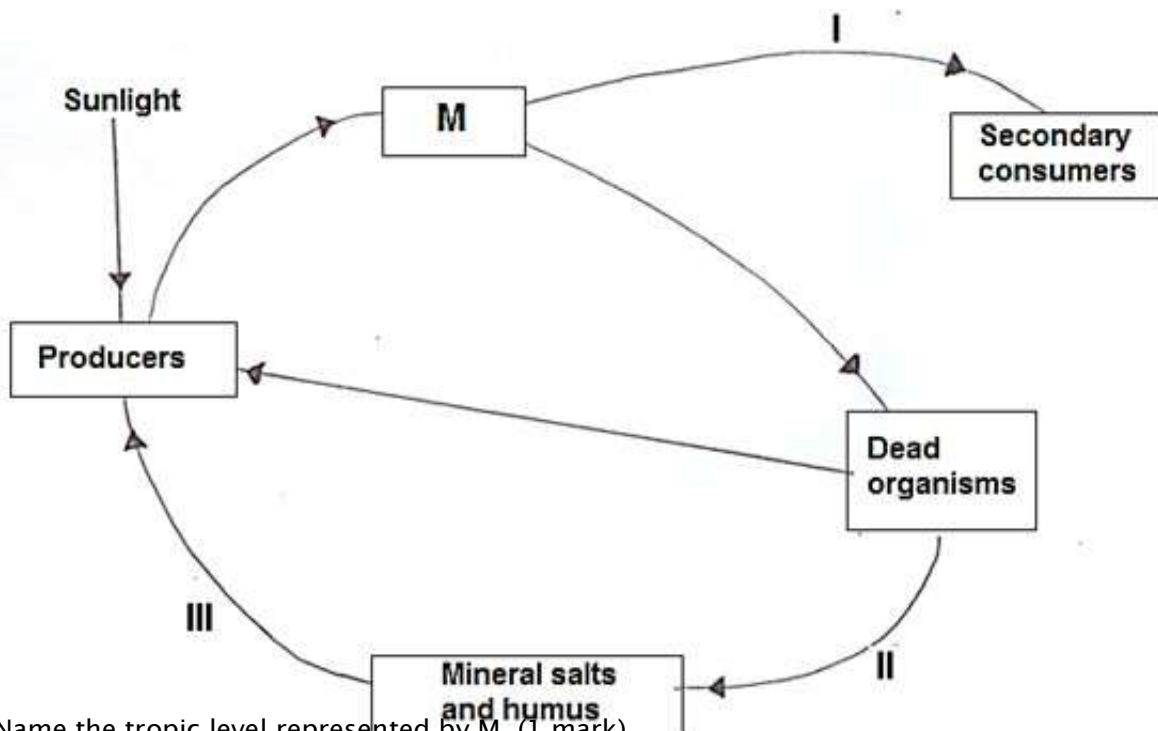
A.....

B.....

C.....

b) If the seedling of diagram 3 was left to grow indicate on diagram 4 the appearance of the marks after 3 days. (1 mark)

18. The diagram below represents recycling of nutrients in a certain ecosystem.



a) Name the tropic level represented by M. (1 mark)

.....

b) Name the processes represented by (3 marks)

I

II

III

19. Explain how drooping of leaves on a hot sunny day is advantageous to a plant.

.....

20. State three ways in which the gill filaments are adapted to their functions.

.....

21. Name the organelles that perform the following functions.

a) Take part in cell division. (1 mark)

.....

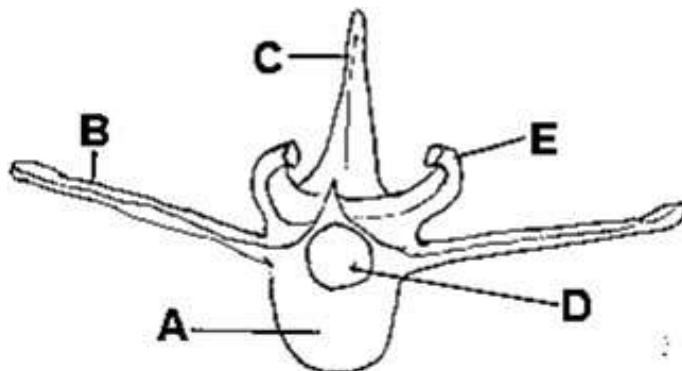
b) Breakdown large molecules and destroy worn-out organelles. (1 mark)

.....

c) Responsible for the manufacture of ribosomes. (1 mark)

.....

22. The figure below shows the frontal view of a lumbar vertebrae.



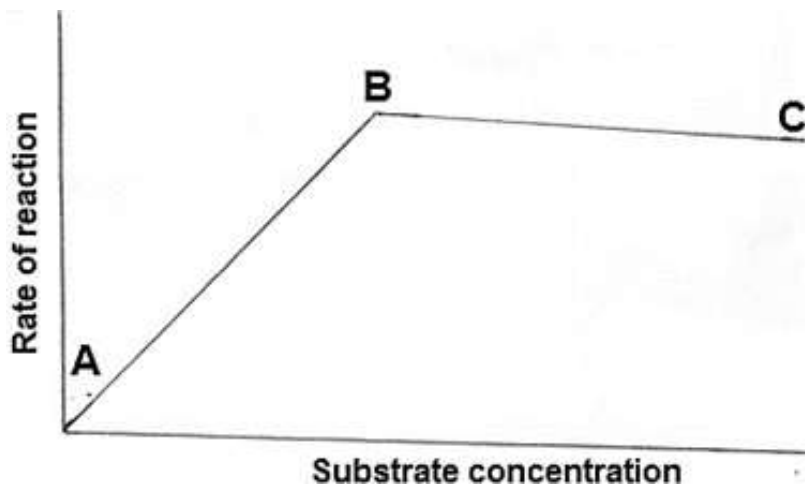
a) Name the parts labelled A-C.

A

B

C

23. The graph below shows the effects of substrate concentration on the rate of enzyme-catalyzed reaction.



a) Account for the shape of the graph between i. A and B (2 marks)

.....

ii. B and C. (2 marks)

.....

24. A small amount of a substance X was applied on one side of maize coleoptiles. After three days the coleoptiles curved away from the side to which the substance was applied.

a) Suggest the identify of substance X. (1 mark)

.....

b) State how this substance may have caused the coleoptiles to curve. (2 marks)

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

25. A person was found to pass out large volumes of dilute urine frequently. Name the:

a) Disease the person was suffering from. (1 mark)

.....

b) Hormone that was deficient. (1 mark)

.....

26. State three pieces of evidence that support the theory of evolution.

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

27. a) Name the causative agent of: a) Typhoid. (1 mark)

.....

b) Candidiasis. (1 mark)

.....