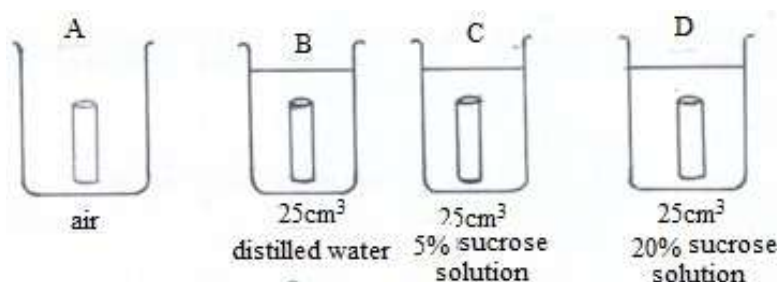


FORM FOUR CLUSTER KCSE MODEL10

BIOLOGY PAPER 1 QUESTIONS

1. a) Define the term species. (1 mark)
.....
.....
b) What is the name given to the system of assigning two scientific names to an organism. (1 mark)
.....
.....
2. State any two characteristics of companion cells.
.....
.....
3. Four cylinders of potato were carefully dried on blotting paper and weighed. Each piece weighed 3g. One was placed in each tube as shown in the drawing below.



- a) After 48 hours, which potato would be heaviest? Explain (2marks)
.....
.....
- b) Name the substance whose movement was responsible for the weight changes in the potato cylinders. (1 mark).....
- c) Name the process which was responsible for this movement in tubes B,C and D. (1 mark)
.....
.....
4. (i) Name any three classes of animals that secrete their nitrogenous waste in form of uric acid. (3marks)
- ii) a) Which condition results from inadequate production of antidiuretic hormone? (1 mark)
.....
- b) What is the significance of an organism having a long loop of henle? (1 mark)
.....
.....
5. Give reasons why lack of roughage in the diet often leads to constipation.
.....
.....
6. During germination and early growth, the dry weight of endosperm decreases while that of the embryo increases. Explain
-

7. State three major functions of the plasma.

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

8. i) Name the type of evolution exhibited by the following structures. (2marks)

a) Homologous structures

b) Analogous structures

ii) State two importances of fossils in the study of evolution. (2marks)

.....
.....

9. a) Name two disorders in human caused by gene mutation. (2marks)

.....
.....

b) Describe the following chromosomal mutations

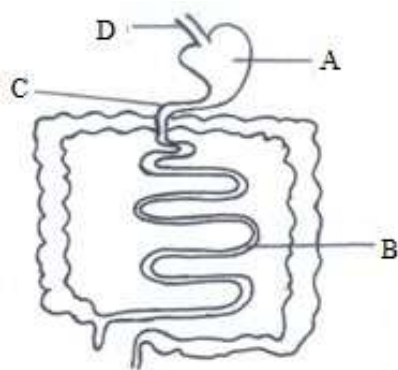
(i) Inversion (1 mark)

.....
.....

(ii) Translocation (1 mark)

.....
.....

10. The diagram below show the human gut.



a) Into which region is pancreatic juice secreted (1 mark)

.....
.....

b) State two observable ways in which the part marked B is suited to its functions. (2marks)

.....
.....

11. A group of students came across a plant that looked like the one shown below.



a) Identify the plant. (1 mark)

.....

b) State the functions of the parts labelled. (2marks)

A.....

D.....

c) With a reason state the division to which the plant belongs. (2marks)

Division

Reason

12. i) Name any two organisms in the soil that fix nitrogen to nitrates. (2marks)

.....
.....

ii) Name the causative agents of the following diseases (2marks)

a) Typhoid

.....

b) Amoebic dysentery

.....

13. State any three changes which occur in a flower after fertilization takes place.

.....
.....

.....
14. Name the factor in red blood cells that is responsible for blood grouping.

.....
15. a) During aerobic respiration, energy in form of a chemical form is released. What is the name of the chemical energy? (1mark)

.....
b) State the importance of the respiratory quotient (2marks)

.....
16. Name the hormone responsible for the following (2marks)

a) Lowering the blood sugar

.....
b) Raising the blood sugar

.....
17. In excretion what is biological principle behind (3marks)

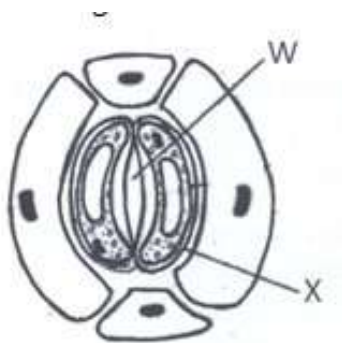
a) Ultrafiltration

.....
b) Selective reabsorption

.....
c) Reabsorption of water

.....
18. Why is water required during germination. Give any two reasons

.....
19. The diagram below shows part of plant tissue.



a) Name cell labelled X and part labelled W. (2marks)

X.....

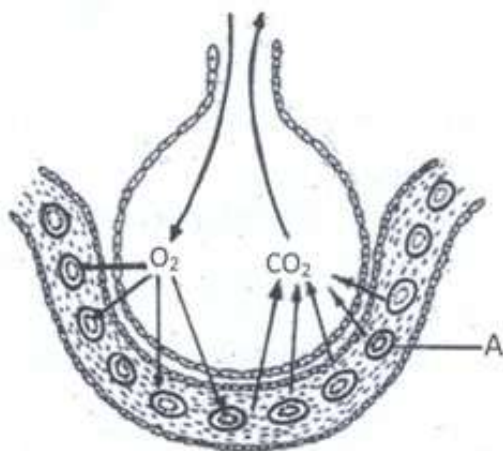
W.....

b) State two adaptations of cell labelled X to its function. (2marks)

.....

.....

20. The diagram below shows the exchange of gases in alveolus.



a) State how the alveoli are adapted to their function. (3marks)

.....

.....

.....

b) Name the cell labelled A. (1 mark)

.....

.....

21. a) Name any one cardiovascular diseases in man. (1 mark)

.....

.....

b) If the nerve supply to the heart of a mammal is severed the rythmic heart contraction and relaxation will go on and heart continues to beat. Explain why. (2marks)

.....

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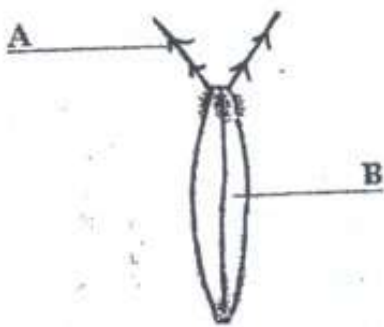
22. State two structural adaptations of blood veins to their function.

.....

.....

.....

23. The diagram below shows a fruit specimen dispersed by a certain agent. Study the diagram carefully and then answer the questions that follow.



a) What type of fruit is represented by the diagram above? (1mark)

.....

b) Name each of the parts labelled A & B. (2marks)

A..... B.....

c) Name the agent of dispersal of the fruit. (1mark)

.....

.....

.....

24. The body cells of an organism contain two copies of 24,000 genes i.e 48,000 genes in total of these. How many genes would have been inherited from the organism's female parent?

.....

.....

25. Besides direct drinking, name two other sources of water in nutrition of man.

.....

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

26. Name the hormone that is responsible for development of a deep voice in humans.

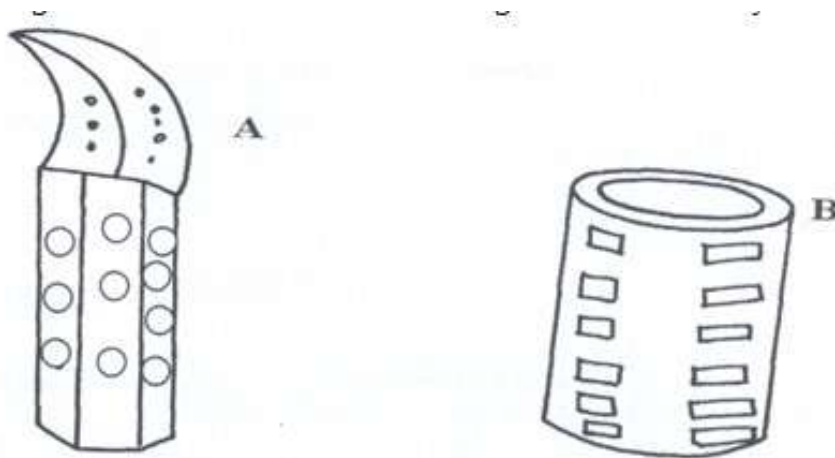
.....

27. Give the importance of mosaic leaf arrangement.

.....

.....

28. The diagrams below show two conducting elements of the xylem tissue.



Identify each of them

A..... (1 mark)

B..... (1 mark)

b) What makes the cellulose side walls of both A and B able to prevent collapsing? (1 mark)

.....

.....