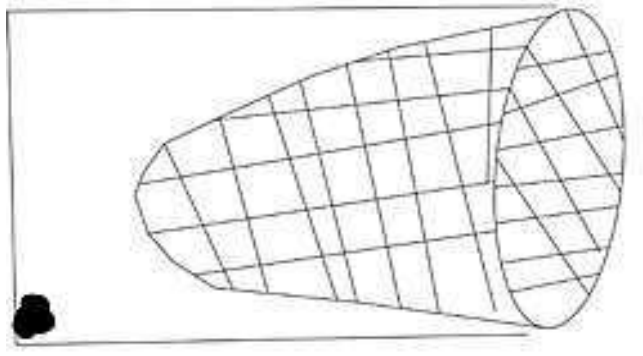


FORM FOUR CLUSTER KCSE MODEL 4
BIOLOGY PAPER 1 QUESTIONS

1. State two differences between dicotyledonous and monocotyledonous plants basing on their leaves.

monocotyledonous	Dicotyledonous
i)
ii)

2. The apparatus drawn below is used for collection of specimens during practical biology, identify the apparatus and state one use.



i) Identify

.....

ii) Use

.....

3. Give the taxon of classification with smallest number of organisms.

.....

4. i) State a cell organelle that perform the following. i) Synthesis and transport lipids.

.....
ii) Destroy worn out organelles.

.....
5. Name two roles of osmosis in animals.

.....
6. Distinguish between Radial symmetry and Bilateral symmetry.

.....
7. a) Give a reason why light stage of photosynthesis only takes place in granum of chloroplast.

.....
b) Name part of mammalian digestive system where the digestion of fats begins.

.....
8. State two functional differences between arteries and veins

Arteries	Veins
(i)	
(ii)	

9. One can use both the nose and mouth for inhalation. Explain which is the more appropriate path of inhalation.

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

10. a) What is the significance of getting rid of the lactic acid produced during anaerobic respiration in animals?

.....

.....

.....

.....

b) How is mitochondrion adapted to its function?

11. a) Explain how surface area and volume are related to temperature control in rats.

.....

.....

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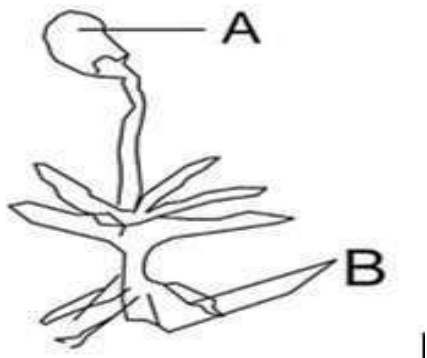
b) State two physiological changes that take place in the human skin in order to facilitate heat gain

in the body.

.....

12. Use the diagram of a plant shown to answer the questions that follow.

a)



a) Name the parts labelled A and B. A.....

B.....

b) Name one morphological feature that is common to reptiles, birds and fish.

.....
.....

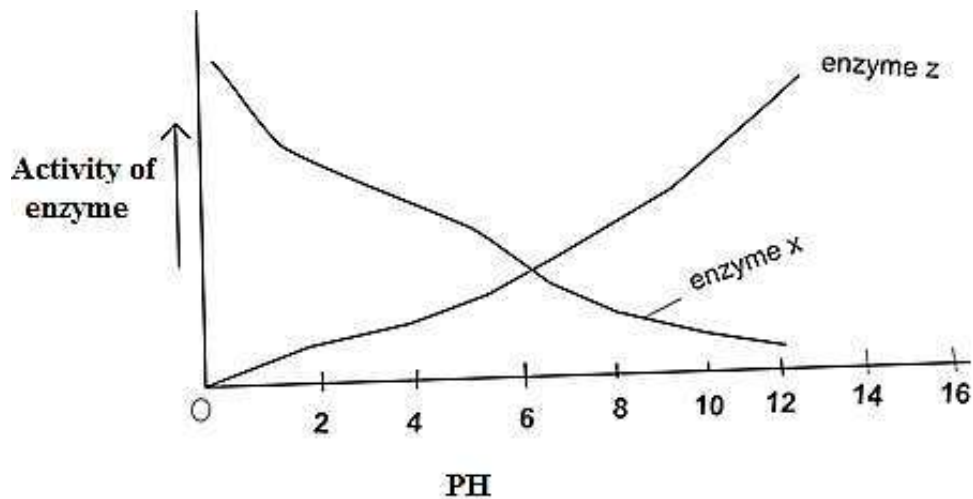
13. State two roles of xylem tissue in plants.

14. . Name the form in which carbohydrates are stored in (2marks)

i) A cell of tomato.....

ii) A cell of monkey.....

15. The curves below shows the activity of enzymes at different PH values



a) State an example of enzyme X and name the part of digestive system is found.

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

b) What is the conducive conditions of enzyme Z?

.....
.....

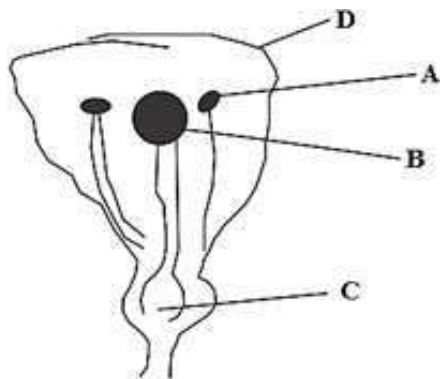
16. a) State how wind affect distribution of organisms in an ecosystem.

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

b) Give three reasons why Biological control methods are preferred to chemical control methods in control of pests and parasites.

.....
.....

17. The diagram below shows longitudinal section of a flower



a) Where on the diagram does each of the following take place;

i) Production of pollen grain.....

ii) Fertilization

b) Name the agent of pollination for the above flower with one reason: (2marks)

Agent.....

Reason.....

18. State three types of a sexual reproduction in organisms.

.....

.....
.....
19. Name two ways by which free nitrogen is made available to plants for use.

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

20. State two functions of progesterone hormone during female menstrual cycle.

.....

21. a) State two internal factors that cause seed dormancy.

.....
.....

b) List two stages of development that a grasshopper passes through to become an adult.

.....
.....

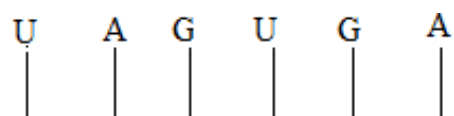
22. Group the following characteristics either continuous variation or discontinuous variations. Blood

groups, height, finger prints, skin colour and ear lobe.

Continuous variation.....

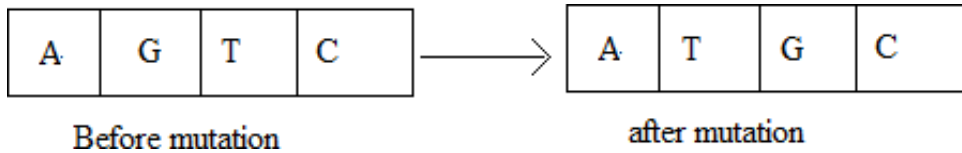
Discontinuous variation.....

23. a) Write down the base sequence on the original DNA strand on RNA shown below was formed



b) State the type of gene mutation shown below.

.....



24. i) The following beaks of birds have been modified:



State the kind of evolution shown

above.....

ii) What is natural selection?

.....

25. Which structure in the ear.

i) Balances pressure

ii) Amplifies vibrations

26. 26. a) Work out the magnification power of the objective lens of a microscope if magnification of

the eye piece lens is X10 and the total magnification of a specimen observed is X400.

.....

27. a) State two functions of bile salts produced by liver.

.....

.....
b) Give one function of Iron as an element in human body and deficiency disease caused?

.....
.....
28. Colour blind is a sex linked genetic disorder due to a recessive gene. A man who is colour blind

marries a woman who is a carrier for the condition. Using letter "C" to represent the normal

condition and "c" for colour blind condition. a) Work out across between the man and the woman.

.....
.....
.....
.....
b) What is the probability of the couple getting

i) A colour blind son.....

ii) A carrier daughter.....

29. Name two causes of allergic reactions. (2marks)

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