

MARAKWET WEST DISTRICT

231/1

BIOLOGY

Paper 1

THEORY

July/August- 2015

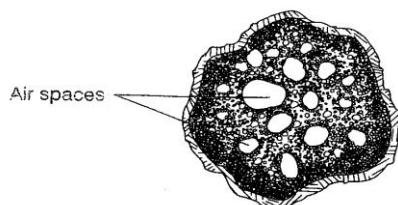
Time: 2 Hours

- 1 Name the blood vessel that transport blood from:-
- (i) Small intestines to the liver. (1mk)
 - (ii) Lungs to the heart. (1mk)
- 2 Name three types of chromosomal mutations. 3mks

3 A bone obtained from a mammal is represented by the diagram below.



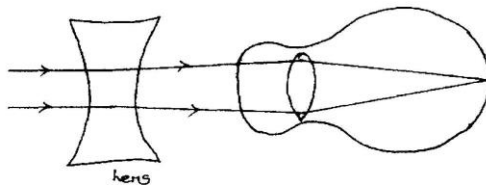
- a) Name the bone. (1mk)
 - b) Which bones articulates with the bone shown in the diagram at the notch? (1mk)
- 4 Name the phylum whose members posses notochord. Lmk
- 5 A person whose blood group is AB requires a blood transfusion. Name the blood groups of the donors. (1mk)
- 6 The diagram below shows a transverse section of a plant stem.



- a) Suggest the habitat of the plant from which the section was obtained. (1mk)
 - b) Give a reason for your answer in (a) above. (1mk)
- 7 State two functions of muscles found in the alimentary canal of mammals. 2mks

- 8 a) State two evidences of evolution. 2mks
- b) Explain the concept adaptive radiation. 2mks

9 The diagram below illustrates a certain eye defect.



- a) State the eye defect in the above diagram. 1mk
- b) i) State one cause of the above eye defect. (1mk)
- ii) What role does the lens play in the correction of the above defect? 2mks

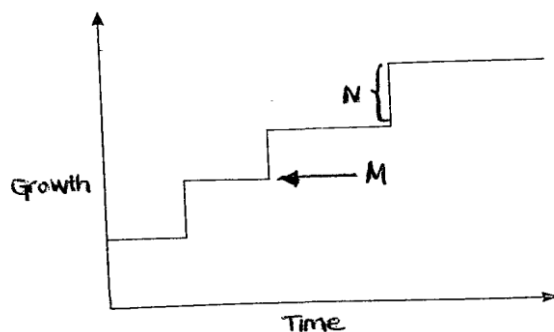
10 The equation below represents a process that occurs in plants.



- a) Name the process. (1mk)
- b) Name the product B. 1mk
- c) State the economic importance of this process. 2mks

- 11 a) Name two structures for gaseous exchange in amphibians. 2mks
- b) What is the effect of relaxation of diaphragm muscles breathing in mammals? 2mks

12 The graph below shows the growth pattern in a grasshopper.

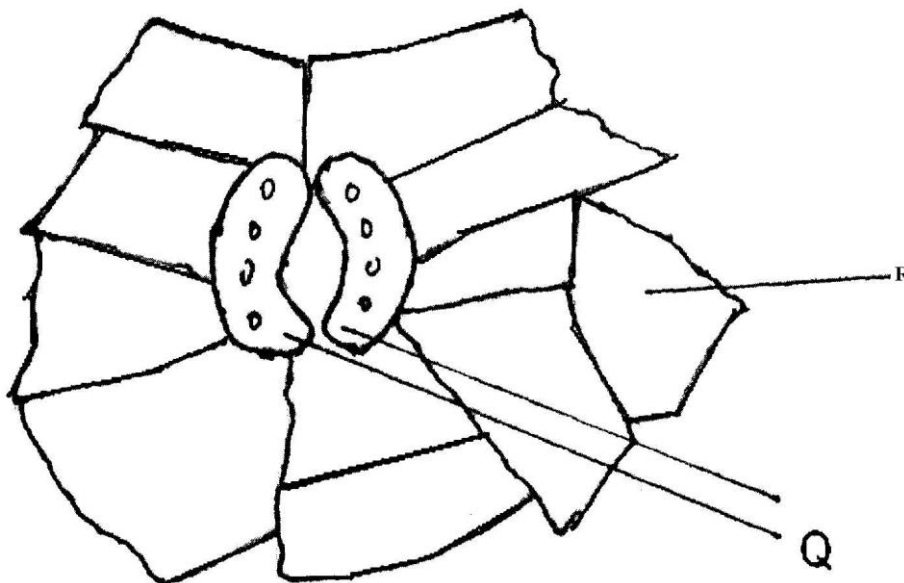


- a) Name the region labelled 2mks
- b) Briefly explain the shape of the graph. 2mks
- c) Give one advantage of metamorphosis in insects. 2mks

- 13 a) What is parthenocarpy. (1mk)
b) Which hormone can be used to induce parthenocarpy in unpollinated flowers. (1mk)
c) What is the significance of slippery seeds in a tomato during dispersal? (1mk)
d) Why is a maize grain considered as a fruit? (1mk)
- 14 a) Define the following terms in human reproduction. 2mks
(i) Parturition.....
(ii) Implantation.....
b) Name the hormone involved in the development of a female secondary sexual characteristic. (1mk)s
c) Give **one** function of amniotic fluid during pregnancy. (1mk)
- 15 Distinguish between haemolysis and plasmolysis. 2mks
- 16 State two roles of hydrochloric acid in the digestion of food. 2mks
- 17 Explain why division Pteridophyta is considered more advanced than division Bryophyta. (3mks)
- 18 a) State two benefits of excretory products in plants. (2mrks)
b) What is the role of ADH in osmoregulation. (1mrk)
c) Name the disease caused by insufficient production of ADH in human. ((1mk))
19. Name the:
a) Material that strengthen xylem tissue. (1mk)
b) Tissue that is removed when the bark of a dicotyledonous plant is ringed. ((1mk))
- 20 Outline three roles of active transport in human body. 3mks
- 21 How is the epidermis of a leaf of a green plant adapted to it functions. (2mrks)
- 22 Explain why the shortest food chains are always the most efficient. (1mk)
- 23 State two reasons why most of the land animals excrete their nitrogenous wastes in form of urea (2mks)

24 Give a reason why the breakdown of pyruvic acid in the mitochondria occurs in a series of enzyme controlled reaction. (1mk)

25. The diagram below represents a structure found in plants.

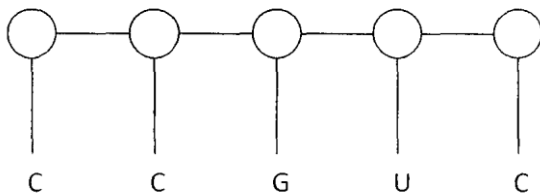


- (a) State the function of the structure labeled Q. (1mk)
- (b) Give two structural differences between O and R. (2mks)

26 State the function of the following parts of a light microscope:

- (a) Diaphragm. (2mks)
- (b) Condenser.

27 The sequence below is a portion of a nuclei acid.



- a) With a reason identify the nucleic acid to which the portion belongs. (2mks)
- b) Why are lipids suitable storage substances intissues of organisms. (1mk)

28 (a) What is meant by the following terms:

- (i) Ecological niche (1mk)
- (ii) Community (1mk)

- b) What is the importance of the following in an ecosystem?
- (i) Bacteria and fungi (1mk)
 - (ii) Predators (1mk)
29. Name the organelle that:-
- a) Manufacture and transport lipids and steroids in a cell. (1mk)
 - b) Contains enzymes that are capable of destroying damaged cells. (1mk)
 - c) Form cilia and flagella in cells that have them. (1mk)
- 30 State how excessive use of agrochemicals affects large water bodies. (2mks)