

**KASSU-JET 2010
JUNE MOCK EXAM
231/1
BIOLOGY ONE
THEORY
TIME: 2 HOURS**

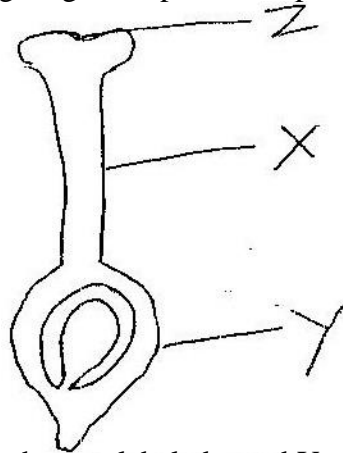
**KASSU-JET 2010-07-06
KENYA CERTIFICATE OF SECONDARY EDUCATION
THEORY P1
BIOLOGY**

Instructions:

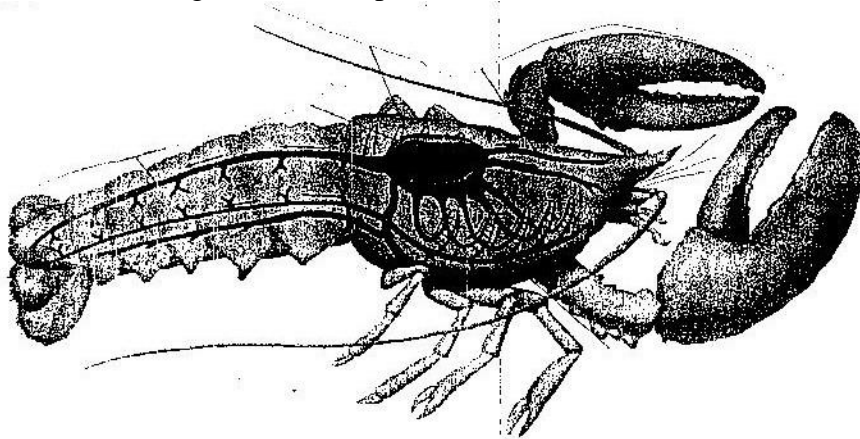
Answer all the questions in the spaces provided

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 26	80	

1. State three ways through which herbaceous plants achieve support. (3mks)
2. The following diagram represents a part of a flower

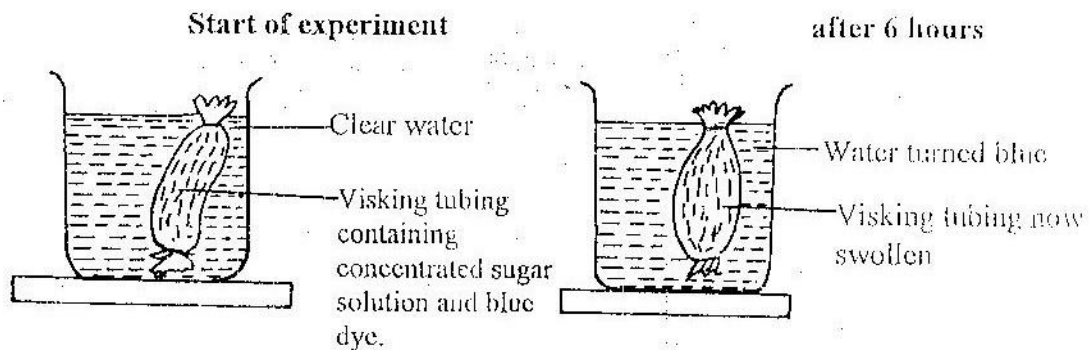


- a) Name the part labeled x and Y (3mks)
 - X -
 - Y -
 - Z -
- b) State the type of placentation represented in the diagram (1mk)
3. A small amount of substance Y was applied on one side of maize coleoptiles. After three days the coleoptiles curved away from the side to which the substance was applied.
 - a) Suggest the identity of substance Y. (1mk)
 - b) Explain how this substance may have caused the coleoptiles to curve (2mks)
4. State the changes that takes place during inhalation in mammals in the following structures. (2mks)
 - a) Ribcage
 - b) Diaphragm (1mk)
5. a) How does variation of pupil size of the eye influence accommodation. (2mks)
- b) State two structural adaptations of the choroids layer of the eye. (2mks)
6. The diagram below represents one of the members of the Kingdom animalia.

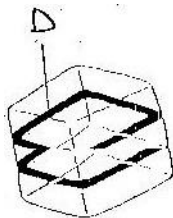


- a) State the phylum and the class from which the organism belong. (2mks)
 i) Phylum-
 ii) Class –
- b) State the reason for your answer in a (ii) above (1mk)
7. a) What is organic Evolution? (1mk)
 b) Distinguish between Darwinian and Larmarckian theories of Evolution.

- 8 An experiment was set up using visking tubing filled with concentrated sugar solution. It was immersed in a beaker containing distilled water as shown below. Observations were made after six hours.

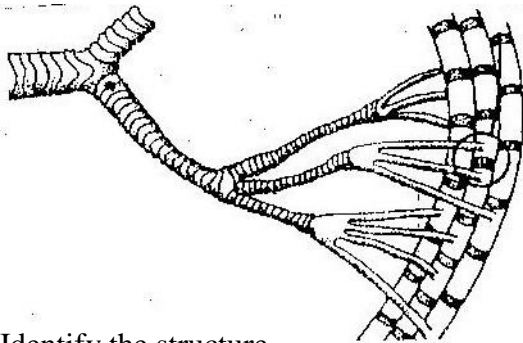


- a) Explain why the visking tubing became swollen as shown above after six hours. (2mks)
 b) By what physiological process did the water in the beaker turned blue. (1mk)
9. The rate of the movement of an ovum in the fallopian tube was experimentally found to be 20 micrometers per minutes⁻¹ in a female rat. The rat was fed on glucose and the rate of movement of the ovum doubled to 40 micrometers per minute.
- a) Name the structural adaptation of the fallopian tube living the movement of the ovum (1mk)
 b) What effect did the diet feed containing glucose have on the structure you named in 4(i) above. (2mks)
10. a) What is root pressure. (1mk)
 b) The cell below was obtained from an endodermis of a dicotyledonous root.



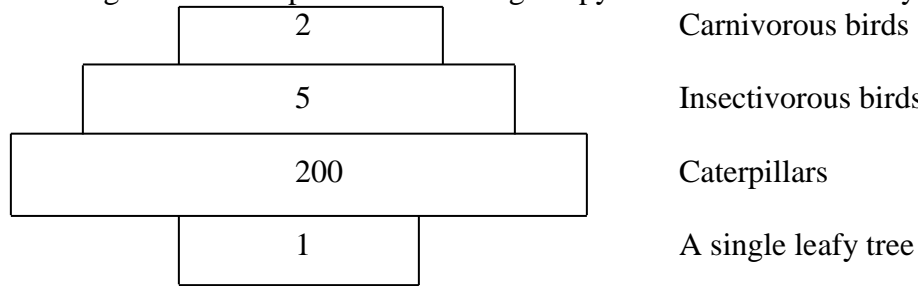
- i) Name the part label D. (1mk)
 ii) What is its function? (1mk)

11. a) Why do guard cells lie in close contact with epidermal cells (1mk)
 b) The figure below shows a structure used in gaseous exchange
 c) The figure below shows a structure used in gaseous exchange.



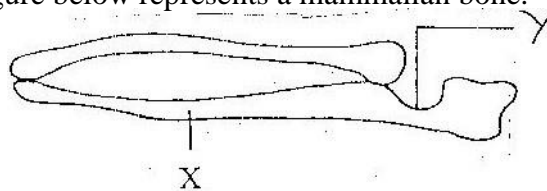
- i) Identify the structure (1mk)
 ii) Explain one observable feature on the figure that adopts the structure to its function. (1mk)
12. State the economic importance of the following plant excretory organs (3mks)
 a) Tannins
 b) Papain
 c) Colchicines
13. a) A student used a light microscope to observe a specimen from the epidermal; tissue of an onion. The eye piece lens magnification was X5 while the objective lens magnification was X40. He observed five cells in a field of view of 4mm.
 i) Calculate the size of one cell in micrometres. (2mks)
 ii) What is the actual size or the cell in micrometers? (1mk)
 b) Explain why images formed by electron microscope are viewed on a screed or photographic plates. (1mk)
14. Name the kingdom from which the fern belongs. (1mk)
 Give two reasons for your answer (2mks)
15. In an experiment a student planted 200 bean seeds on a botanical plot. After seven days he counted seedlings in the plot and found that they were 150.
 a) Calculate the percentage germination show your working (3mks)
 b) What name is given to this percentage germination (1mk)
16. State the sigificance of a counter flow system in urine formation (2mks)
17. a) Why would burning charcoal in a poorly ventilated room cause death (2mks)
 b) Why are there no blood clots on normal blood vessels? (1mk)
18. Explain how nutrients are transported in insect (3mks)

19. The diagram below represents an ecological pyramid in a certain ecosystem.

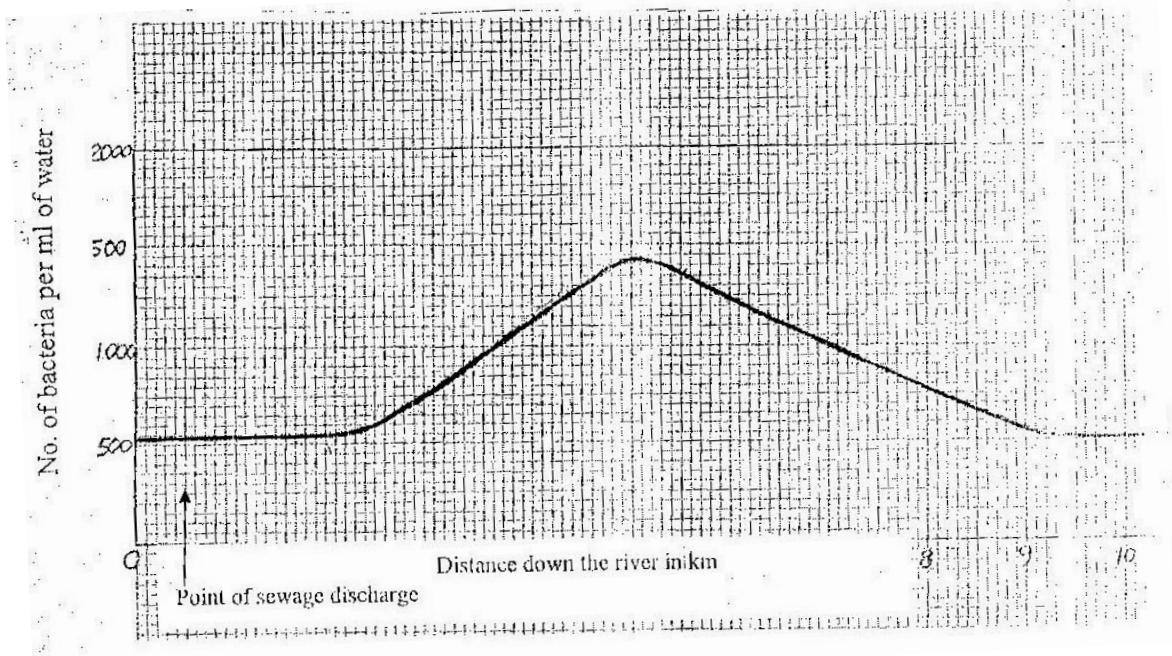


- a) Identify the ecological pyramid (1mk)
 b) The man in (a) above marries a woman carrier of the trait for the disorder. What is the probability of their children inheriting the trait? (1mk)

22. The figure below represents a mammalian bone.



- a) Identify the bone labeled X (1mk)
 b) Which bone articulates with bone in (a) above at point Y (1mk)
 c) Name the type of joint formed at point Y. (1mk)
23. Explain:
 a) The primary productivity on aquatic ecosystem decreases with increase in depth. (3mks)
 b) The carrying capacity for wild animals is higher than that of a paddock of the same unit area (1mk)
24. The graph below shows the effect of sewage on the population of a species of bacterial in a certain river.



Account of the changes in population of bacteria down the stream between.

- a) 2-5 Kilometres (1mk)
- b) 5-10 Kilometres (1 mark)

25 State three conditions that must be present for energy to be produced in a cell.

(3mks)

26. a) What is R.Q .Respiratory quotient?

(1mrk)

b) State two importance of RQ

(2 mks)