**Name** .....**ADM NO:** .....

**Class**..... **Roll call no**.....

**Candidate's signature** .....

**231/1**
**BIOLOGY**
**Paper 1**
**PRE-MOCKS 2017**
**TIME: 2 HOURS**

***Instructions to candidates***

- *Answer all the questions in the spaces provided.*
- *Answer must be written in the spaces provided in the question paper.*
- *Additional pages must not be inserted.*
- *This paper consists of 8 printed pages.*
- *Candidates should check the question paper to ascertain that all the pages are printed and indicated and no questions are missing.*

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| Questions | Maximum Score | Candidate Score |
|---|---|---|
| 1 – 28 | 80 | |

1. State two functions of the cell sap (2marks)

.....

.....

2. State two main differences between Class Crustacea and Arachnida. (2 marks)

.....

.....

3. State three adaptive features which the buccal cavity of a frog has in common with the alveoli of the lungs of a human being. (3 mks)

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.....

4. (a) Name **three** types of cells that carry out photosynthesis . (3 mks)

.....

.....

.....

5. (a) State the function of amylase in the human body. (1mk)

.....

(b) Name two parts of the alimentary canal where amylase is secreted. (2mks)

.....

.....

6. What is the corrective measure of having a low blood glucose level in the body. (3mks)

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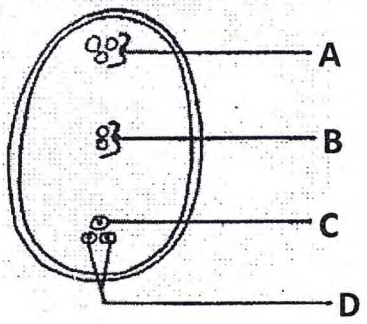
7. The diagram **below** shows a mature embrvo sac of a flowering plant.

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(a)Name the parts labeled **A** and **D**. (2mks)

A.....

D.....

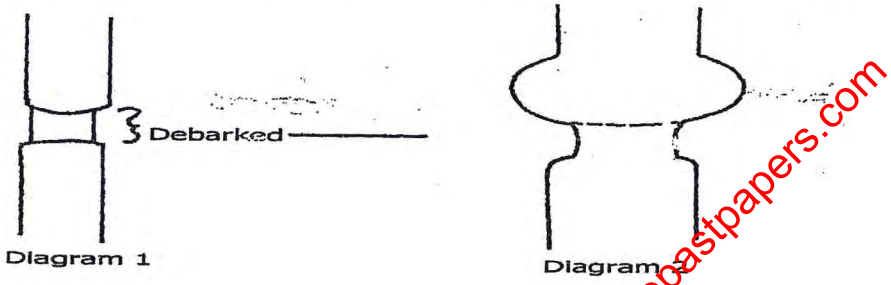
(b) What is the function of the structure labeled B. (1mk)

.....

(c) Why is cross pollination more advantageous to a plant species than self pollination?

..... (1mk)

8. The diagram below represents an experiment that was set up to investigate a certain process.




a) Name the process that was being investigated (1mk)

.....

b) Account for the swelling in diagram 2 (2mks)

.....

.....

9. **State** the functions of the following hormones in female reproduction. (2mks)

(i) Luteinizing hormone .....

(ii) Oxytocin .....

10. **State** the role each of the following components of the skin. (3mks)

(iii) Melanin.....

(iv) Adipose fat deposit.....

(v) Sebum .....

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11. a) Guard Cells are specialized epidermal cells. State two structural features which suit them to their functions. (2mks)

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.....

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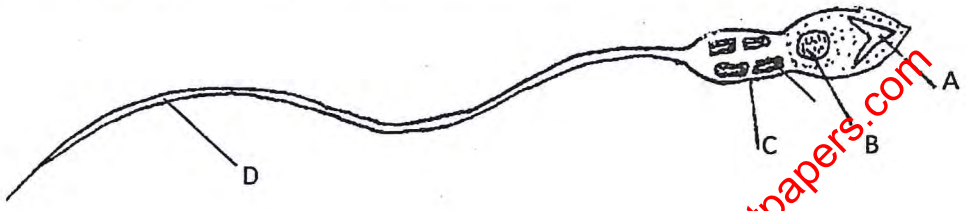
b) Apart from gaseous exchange, give one other function of stomata. (1mk)

.....

12. The diagram below is a specialized mammalian cell.




a) Name the parts labelled B and D. (2mks)

B .....

D .....

b) State how the following parts are adapted to their functions :

(i) Part labelled A. (1mk)

.....

(ii) The portion marked C. (1mk)

.....

13. Define the following terms used in ecology. (4 mks)

(i) Biosphere

.....

(ii) Population

.....

(iii) Synecology

.....

(iv) Carrying capacity

.....

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14. a). Name one hormone involved in insect metamorphosis. (1mk)

.....

b) State the site where the above named hormone is produced (1 mk)

.....

c) State the importance of metamorphosis to the life of insects. (2mks)

.....

.....

15. A student measured the diameter of a mitochondrion on a photomicrograph whose magnification was x50000 to be 1mm. What was the actual size of the mitochondrion in micrometres? (2mks)

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16. State two differences Agranulocytes and granulocytes. (2mks)

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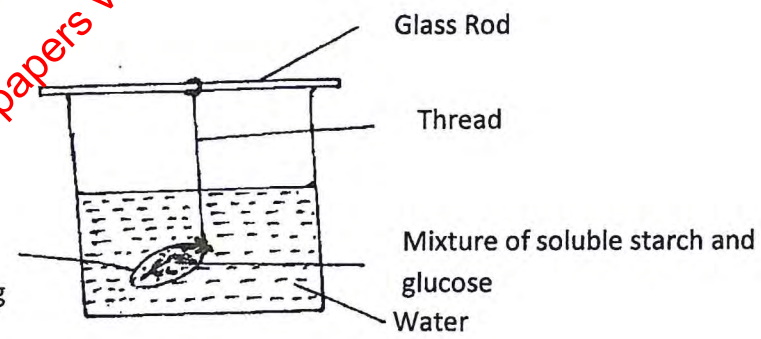
17. In an experiment to investigate certain physiological process, a student had his experiment set up as shown below.




To a certain the occurrence of the physiological process investigated he carried out food test on the water in the beaker. Both starch test and reducing sugar test at the beginning of the experiment were negative. After the set up was left undisturbed for 20 minutes, starch test was still negative but that of reducing sugar was positive.

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a) State the physiological process which takes place in the human body illustrated by the set up above. (1mk)

.....

b) Name the part of the human body where the processes stated in (10) (a) above takes place. (1mk)

.....

18. Why is excretion of nitrogenous wastes more of a problem to animals than plants? (2mks)

.....

.....

19. a) Explain why swallowing and breathing in cannot occur at the same time. (2mks)

.....

.....

b) Why is it necessary that pepsin be produced in its inactive form? (1mk)

.....

20. Study the diagram below and answer questions that follow

(i) What is the name given to the apparatus shown above (1 mk)

.....

(ii) What is its use in Biological studies? (1 mk)

.....

21. Carbon (iv) oxide can be transported from the tissues to the lungs within the red blood cells. Give two advantages of this mode of transport. (2mks)

.....

.....

22. a) Differentiate between the primary growth and secondary growth in woody plants. (2mks)

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b) Name two tissues responsible for secondary growth in flowering plants. (2mks)

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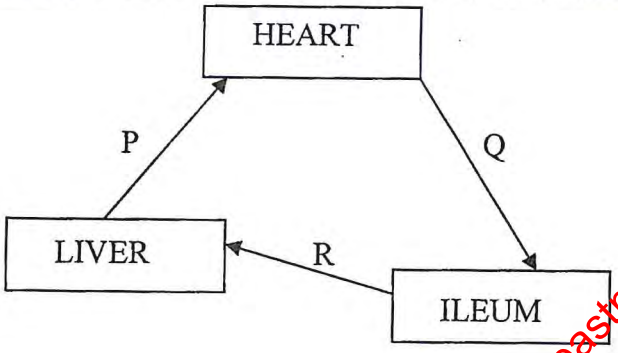
23. The diagram below shows part of the mammalian circulatory system.




a) Identify the blood vessel marked Q. (1mk)

.....

b) State two differences in the composition of blood in vessel R and P. (2mks)

.....

.....

24. Explain how the following adaptations minimize the rate of transpiration.

a) Sunken stomata. (1mk)

.....

b) leaf drooping (1mk)

.....

25. a) Differentiate colourblindness and night blindness. (2 mks)

b) Give two vitamins synthesized in human body. (2 mks)

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26. The diagram below represents a mature fruit

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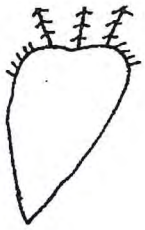

a) To what group of fruits does the specimen drawn above belong? (1mk )

.....

b) With a reason name the agent of dispersal. (2mks )

.....

.....

27. a) Name the process in human beings that may lead to addition or loss of one or more chromosomes. (1mk)

.....

b) State three benefits of polyploidy in plants to a farmer. (3mks)

.....

.....

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28. The paddles of whales and fins of fish adapt the animals to aquatic habitats.

a) Name the evolutionary process that may have given rise to the similar structures. (1mk)

.....

b) What name is given to such structures? (1mk)

.....

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