

NAME:.....ADM NO:..... CLASS:.....

END TERM 2 EXAM
BIOLOGY
231/1
PAPER 1

INSTRUCTIONS: ANSWER ALL THE QUESTIONS IN THE SPACES PROVIDED.

1. Name the branch of Biology that deals with:
 - (a) Study of insects. (1mk)
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.....
 - (b) Study of inheritance. (1mk)
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2. a. Give reasons why the wall of the left ventricle of heart is thicker than that of the right ventricle.(2m)
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- b. Name the blood vessel with the highest concentration of.
 - (i) Glucose. (1mk)
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.....
 - (ii) Carbon (IV) oxide. (1mk)
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3. (a) Name the excretory product in plants that are used for the following.
 - (i) Manufacture of antimalaria drugs. (1mk)
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.....
 - (ii) Manufacture of chewing gum. (1mk)
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- (b) Name the processes responsible for:
 - (i) Presence of glucose in glomerular filtrate. (1mk)
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(ii) Absence of glucose in urine. (1mk)

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4. State **two** limitations of using a quadrant as a method of estimating population of organisms. (2mks)

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5. (a) Distinguish between *resolution* and *magnification* as used in microscopy. (2mks)

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(b) Name the tissue that carry out the following functions in mammals.

i. Binds and supports various organs in the body. (1mk)

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ii. Transport oxygen throughout the body. (1mk)

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6. a. State the importance of divergent evolution. (1mk)

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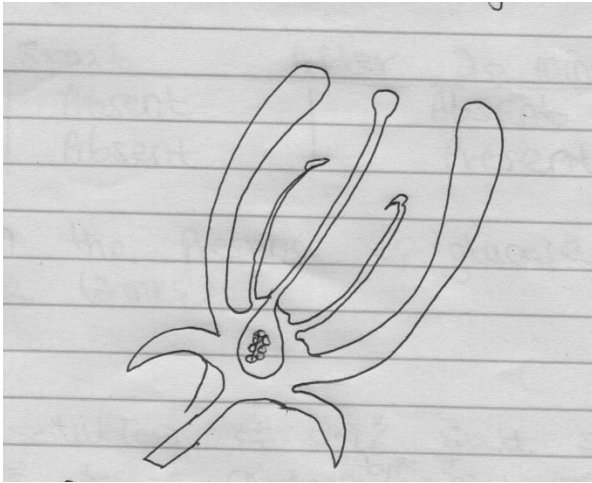
b. i) What are vestigial structures? (1mk)

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ii) Give **one** example of a vestigial structure in humans. (1mk)

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7. a. Below is a simplified diagram of a flower.



b. i) Identify its agent of pollination. (1mk)

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ii) Name the type of ovary shown above. (1mk)

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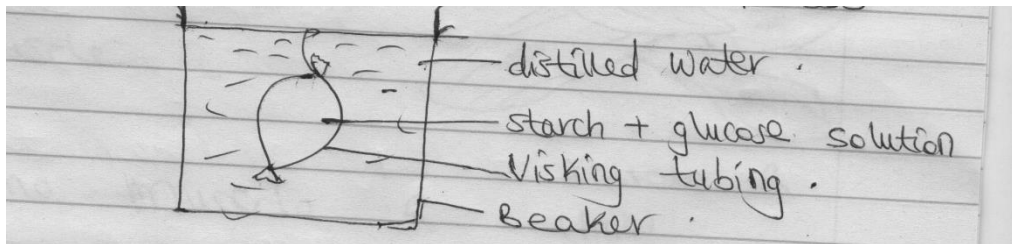
iii) Explain one observable mechanism that will hinder self pollination and fertilization in the above flower. (1mk)

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c. State **two** changes that takes place in a cell during interphase. (2mks)

8. An experiment set up shown below was used to investigate a certain process.

After 20minutes, a student tested the sample from the beaker for starch and glucose and recorded the results as shown in the table below.



<i>Start After 20 minutes</i>		
Starch	Absent	Absent
Glucose	Absent	Present

(a) Explain the presence of glucose in the water sample. (2mks)

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(b) If a solution of 0.9% salt solution is isotonic to a certain animal cell, explain what happens when the animal cell is placed in a solution of 1.2% salt solution. (3mks)

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9. Below are diagrams of muscles found in mammals, Study them carefully and answer the questions that follow.



i) Name the muscle **R**. (1mk)

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ii) Give the function of muscle **Q**. (1mk)

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.....

iii) Name **one** organ in which muscle **R** is found. (1mk)

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.....

b. State the function of the following features.

(i) Odontoid process. (1mk)

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.....
(ii) Vertebrarterial canal. (1mk)

10. a. Define the term Eutrophication. (1mk)

b List two effects of Eutrophication in an aquatic ecosystem. (2mks)

11. (a) In which phase of photosynthesis are carbohydrates formed? (1mk)

(b) Explain the Biological disadvantage of growing plants in the living room. (1mk)

12. a) When are **two** organisms considered to belong to the same species. (2mks)

b) Form 1 students were to collect some tiny plants from a tree trunk. State the most appropriate Instrument to use. (1mk)

13.a) For each of the following insect hormones give its function. (2mks)

HORMONE	FUNCTION
Ecdysone	
Juvenile	

b. When the tip of a plant is cut, lateral branches develop.
i) What name is given to this phenomenon? (1mk)

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.....
ii) Which plant hormone is responsible for the phenomenon above? (1mk)

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14. a. Distinguish between the terms homodont and heterodont. (1mk)

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.....
b. What is the function of carnassials teeth? (1mk)

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c. A certain animal has no incisors, no canines, 6 premolars and 6 molars in it's upper jaw. In the lower jaw, there are 6 incisors 2 canines, 6 premolars and 6 molars. Write its dental formula. (1mk)

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15. A Horse has 64 chromosomes in it's somatic cells while a donkey has 62. A mule is produced when a horse mates with a donkey.

a. Work out the number of chromosomes in a mule, show your working. (2mks)

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b. Why is a mule sterile? (1mk)

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16. A. Explain two ways in which xylem vessels are adapted to their function. (2mks)

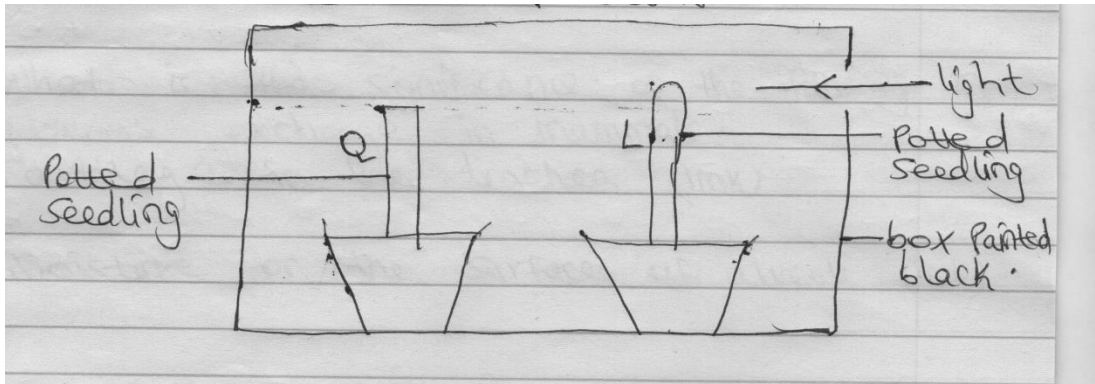
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b. State **two** environmental factors that increase the rate of transpiration. (2mks)

17. Two potted plants were treated as follows.

Q-tip of the seedling out

L-Tip of the seedling intact.

The seedlings were then covered with a box that had a hole on one end as shown in the set up below.



a. State the expected observations after 3 days. (2mks)

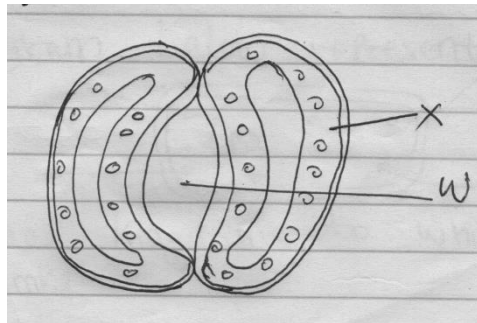
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b. Explain the observations in (a) above. (2mks)

Q

L

18. The diagram below shows parts of a plant tissue.



a. Name the part labeled **W**. (1mk)

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b. State two adaptations of cell labeled **X** to its functions. (2mks)

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19. Explain what happens to excess amino acids in the liver in humans. (4mks)

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20. What is the significance of the following in gaseous exchange in mammals?

i) Cartilage in the trachea. (1mk)

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ii) Moisture on the surface of alveoli. (1mk)

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iii) Mucus on inner surface of trachea. (1mk)

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21. Which structure in the ear detect:

i) Change in posture. (1mk)

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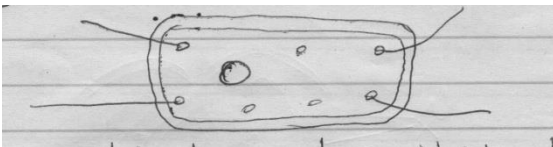
ii) Sound waves. (1mk)

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22. Name the products of anaerobic respiration in plants apart from energy. (2mks)

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23. The diagram below represents a bacterium cell.



a. Name the kingdom to which the bacterium belongs. (1mk)

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b. State **two** distinguishing characteristics of the members of the kingdom named above. (2mks)

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24. State two reasons why accumulation of lactic acid leads to an increase in heart. (2mks)

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25. Name the causative agent of Bilhazia. (1mk)

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