



ST. MARY'S GIRLS' SCHOOL –RUNDA

Name.....

Class.....

Adm. No.....

2024 APRIL HOLIDAY ASSIGNMENT

FORM 3 BIOLOGY

TIME 2 HOURS

1. a) A student using a light microscope observed blurred image of onion epidermal cell.

Name part of a microscope he needed to use to get a clear image. **(1 mark)**

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b) If the field of view measured 3mm and he counted 15 cells, determine the size of one cell in micrometers. **(3 marks)**

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2. Why is oxygen important in the process of active transport in cells? **(2 marks)**

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3. What is the use of osmosis in plants? **(2 marks)**

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4. a) Name the main product of dark stage of photosynthesis. **(1 mark)**
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- b) Explain why insectivorous plants trap and digest insects. **(2 marks)**
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5. State **3** ways in which the ileum is structurally adapted to the absorption of digested food **(3 marks)**
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6. What are the functions of muscles found in the alimentary canal of mammals? **(3 marks)**
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7. a) What are the functions of bile juice in food digestion? **(2 marks)**
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- b) How does substrate concentrate affect rate of enzyme reaction? **(1 mark)**
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8. Give **three** structural differences between arteries and veins. **(3 marks)**
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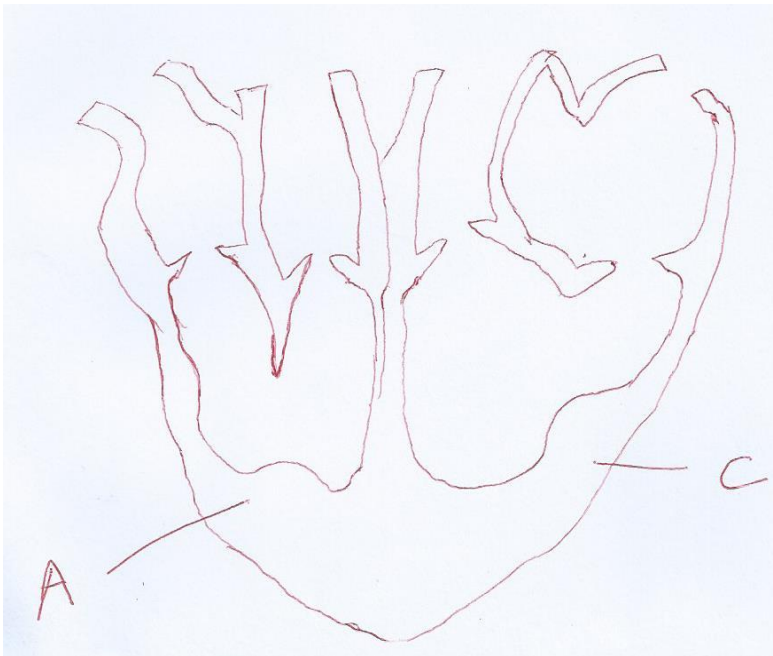
9. State **three** adaptations of xylem to its functions. **(3 marks)**

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10. Name **3** processes by which manufactured food is translocated. **(3 marks)**

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11. Below is a diagram of the heart



a) On the diagram, indicate how blood flows in and out of the heart. **(2 marks)**

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b) Explain why chamber C is thicker than chamber A. (2 marks)

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12. other than using quadrant ;state two other methods of estimating population (2 marks)

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13. How are aerenchyma tissues adapted to their functions? (2 marks)

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14. Describe how carbon (IV) oxide move from insect body tissue until it reaches the atmosphere. (2 marks)

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15. a) Give a reason why there is high rate of production of lactic acid during exercise. (2 marks)

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b) What causes decrease in lactic acid after exercise? (1 mark)

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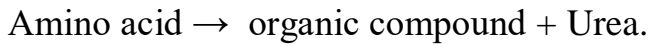
16. i) In what form is energy stored in muscles? (1 mark)

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ii) Give two economic importance of anaerobic respiration in industries. (2 marks)

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17. Below is an equation representing a metabolic process in mammalian liver.



(a) Identify the process. (1 mark)

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(b) What is the economic importance of the process to mammals? (1 mark)

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18. Urine sample obtained from a given mammal was found to contain sugar.

(a) i) Name the disease the animal may have suffered from. (1 mark)

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ii) Name the hormone deficient in the animal. (1 mark)

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b) Give **two** structural modifications of nephron found in desert mammals. (2 marks)

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19. state two characteristics of population (2 marks)

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20. What are the harmful economic importance of fungi to man? (2 marks)

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21. Name **two** characteristic feature found in members of division bryophyta. (2 marks)

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22. a) Name the class to which a crab belong. (1 mark)

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b) Give **two** distinguishing characteristics of organisms belonging to kingdom monera. (2 marks)

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23. State the function of the following cell organelles.

i) Lysosome

(1 mark)

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ii) Golgi bodies.

(2 marks)

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24. a) Give reasons for the following microscopic work.

i) Staining specimen before observation.

(1 mark)

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ii) Putting a drop of water on specimens.

(1 mark)

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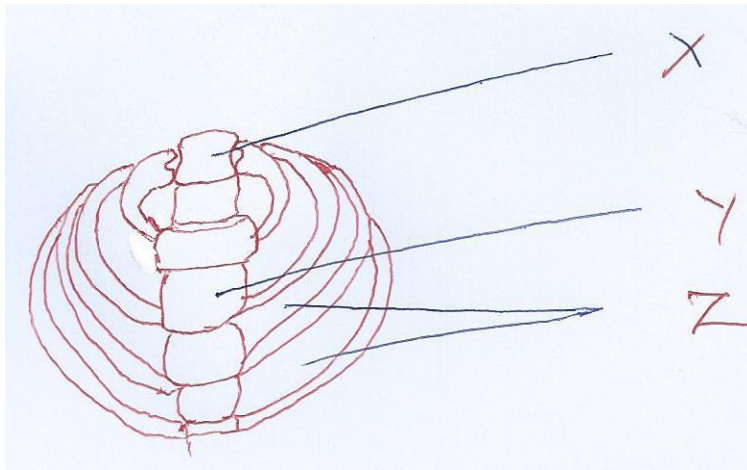
b) When using eye piece magnification of X10 a cell was magnified 600 times.

Determine magnification of the objective lens. (Show your working)

(2 marks)

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25. Below is a diagram of a mammalian rib cage.



(a) Identify the structure labeled X. (1 mark)

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(b) How does the part labeled Z facilitate breathing in? (3 marks)

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26. a) Name the substrate used in respiration during starvation. (1 mark)

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b) Explain why lipid though contain high amount of energy is not used as the main respiratory substrate. (2 marks)

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27. Name **three** factors that affect rate of diffusion. (3 marks)

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