

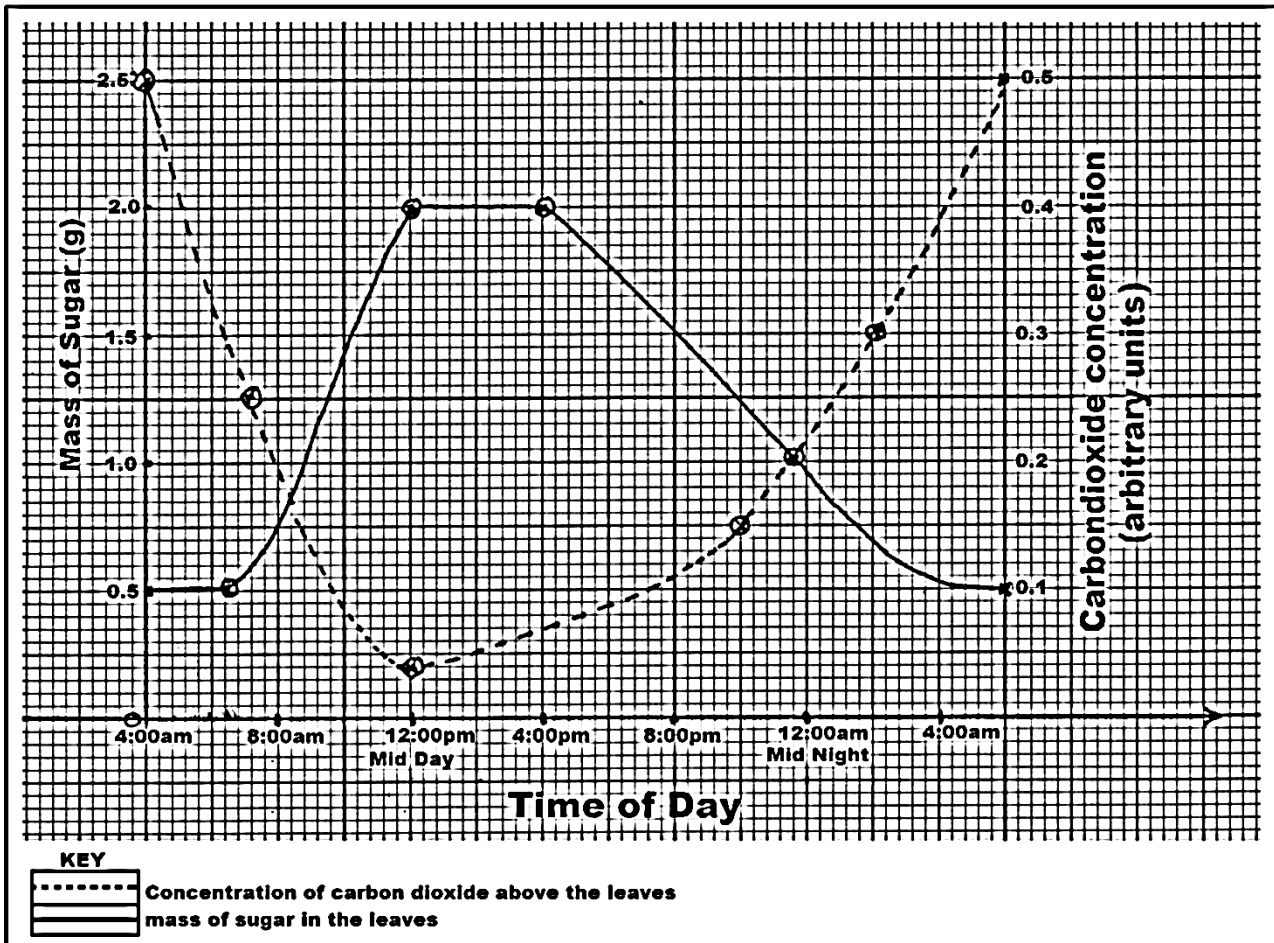
S.4 BIOLOGY ASSIGNMENT (1)

INSTRUCTIONS

Answer all questions in both sections B and C.

SECTION B:

1. The graph below shows changes in the concentration of carbon dioxide above the leaves and mass of sugar in a photosynthesizing leaves through 24 hours of the day.



a) For the period shown, describe the changes in the:

i) Concentration of carbon dioxide. (4 marks)

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ii) Mass of sugar. (4 marks)

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b) For the period shown, explain the changes in the:
i) Concentration of carbon dioxide. (4 marks)

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ii) Mass of sugar (4 marks)

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iii) From the graph, determine the carbon dioxide concentration
at 8:00pm. Illustrate on the graph. (2 marks)

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c) State two ecological roles of photosynthesis. (2 marks)

2. a) i) What is locomotion? (1 mark)

ii) Why is support and movement important in plants? (3 marks)

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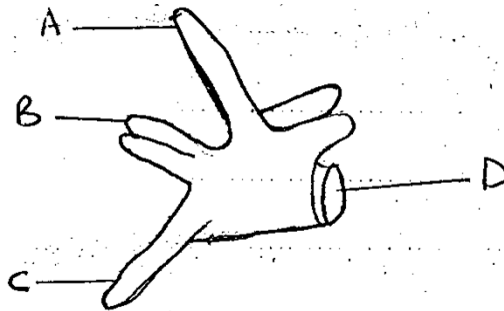
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b) The figure (VI) below represents a mammalian vertebra.



i) From which region of the vertebral column does the drawn vertebra come? (1 mark)

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ii) Name the parts labelled A, B, C. (3 marks)

- A.
- B.
- C.

iii) What is the function of structure B and D.

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3. a) What is the difference between complete and incomplete metamorphosis in insects. (2 marks)

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- b) State four differences between an anopheles mosquito life cycle and culex mosquito life cycle. (4 marks)

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- c) State any two economic importance of mosquitoes. (2 marks)

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SECTION C

4. a) What is a balanced diet? (1 mark)
b) Describe the digestion of food in the duodenum (7 marks)
c) How is constant blood glucose level maintained in man? (7 marks)
5. a) State Mendel's first law. (1 mark)
b) Describe how sex is determined in man. (5 marks)
c) A colour blind man married a normal sighted woman.
i) Use genetic crosses to show the inheritance of this trait. (6 marks)
ii) On which chromosome is the gene coding for colour blindness located? (1 mark)
iii) Explain why there are more colour blind males than females? (2 marks)

6. a) What is germination? (1 mark)
b) With the help of diagrams describe germination in a bean seed. (14 marks)
7. a) What is a parasite? (2 marks)
b) Give an example of an organism that is both a parasite and host, naming its host and parasite respectively. (2 marks)
c) i) What problems does a tape worm face in its way of life? (5 marks)
ii) How is it adapted to overcome those problems? (6 marks)

END