ST. STEPHEN'S COLLEGE BBAJJA

S.3 BIOLOGY

1. Table 1 shows results obtained from an investigation carried out on a fresh plant. The plant was placed under water which had it's carbondioxide concentration varied as the number of oxygen involved per minute by the plant was observed and recorded. The experiment was carried out under sunlight at 25^0c.

Table 1

Carbondioxide concentration (percentage by volume)	Number of oxygen bubbles per minute
0.00	0
0.02	04
0.08	20
0.14	24
0.18	24

a) What was the aim of the experiment?

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b) Draw a graph to represent the information in table 1

c) Describe the graph in (b) above

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d) Using the information, explain the observations?

i) At carbondioxide concentration of 0.00

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ii) Between the carbon dioxide concentration of 0.02 and 0.18

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e) Suggest an explanation for what would be observed in the experiment if the

i) Carbondioxide concentration was increased to 0.2

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ii) Temperature was lowered to 5^0c.

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2. What is an enzyme?

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b) State three factors which affect enzyme action

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c) The optimum p H for enzyme X is 2.00 and for enzyme Y and name the parts of the alimentary canal you would expect to find each enzyme.

Name of enzyme		Part of the alimentary canal the enzyme is found
X		
Y		

d) State two enzymes contained in the panacreatic juice, the food substance acted on by each enzyme and the product formed in each case.

Enzyme	Food substance acted upon	Product formed
i) ii)		

3. The diagram in figure 5 shows the structure of a virus.

a) Label parts marked A,B,C and D

A. .....

B. .....

C. .....

D. .....

b) What food substances enter

(i) A .....

(ii) B .....

c) State two factors whic make a valles an effective absorbing structure.

(i) .....

(ii) .....

d) How does the absorbed ffood in B reach the general circulation.

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e) State two nutrients whic are absorbed in the gut before reaching the villus.

(i) .....

(ii) .....

4. (a) (i) State the difference between cross-pollination and self pollination.

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(ii) Give three structural features of flowers that ensure cross - pollination.

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b) Give five adaptations of flowers for insect pollination.

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SECTION B

5. (a) Describe the lifecycle of a housefly. (07 marks)
   (b) What is the economci importance of a housefly. (03 marks)
   (c) How would you minimize the spread of housefly in a home. (05 marks)

6. (a) What is soil erosion? (02 marks)
   (b) State the various types of soil erosion. (06 marks)
   (c) Explain how man's activities may lead to soil erosion. (07 marks)

7. Explain how a dicotyledonous leaf is adapted for the process of photosynthesis . (15 marks)
8. (a) Describe the digestion of proteins in the human alimentary canal. (10 marks)
   (b) What may happen to the products of digestion of porteins. (10 marks)

END