Enzymes – 2022 June IGCSE 0610

1. June/2022/Paper_ 12/No.10

Which type of molecule are enzymes made of?

A carbohydrates

B fats

C proteins

D vitamins

2. June/2022/Paper_ 13/No.10

What is the correct definition of an enzyme?

A a carbohydrate that functions as a biological catalyst

B a protein that functions as a biological catalyst

C a substance that is changed by the reaction

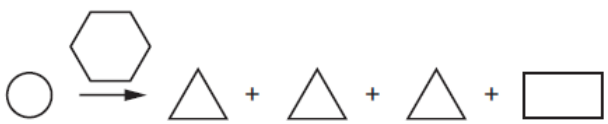
D a substance made of fats that changes the rate of a reaction

3. June/2022/Paper_ 13/No.15

Which diagram represents the action of lipase?

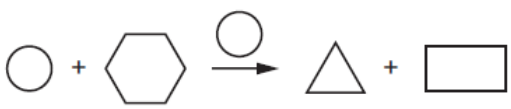
A

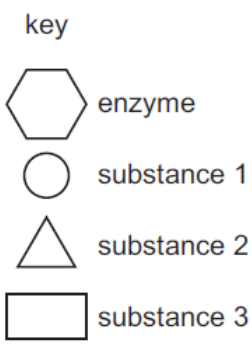
B



C

D





4. June/2022/Paper_ 21/No.9

Some terms used to describe enzyme-controlled reactions are listed.

1 catalyst

2 product

3 protein

4 substrate

Which terms describe an enzyme?

A 1 and 3 **B** 1 and 4 **C** 2 and 3 **D** 2 and 4

5. June/2022/Paper_ 21/No.10

Which statement describes the effect of temperature on enzymes?

A High temperatures denature enzymes making it difficult for substrate molecules to fit into the active site.

B High temperatures denature enzymes making it easy for substrate molecules to fit into the active site.

C Low temperatures denature enzymes making it difficult for substrate molecules to fit into the active site.

D Low temperatures denature enzymes making it easy for substrate molecules to fit into the active site.

6. June/2022/Paper_ 23/No.9

What is the correct definition of an enzyme?

A a carbohydrate that functions as a biological catalyst

B a protein that functions as a biological catalyst

C a substance that is changed by the reaction

D a substance made of fats that changes the rate of a reaction

7. June/2022/Paper_ 23/No.10

Which statement describes the effect of temperature on enzymes?

A High temperatures denature enzymes making it difficult for substrate molecules to fit into the active site.

B High temperatures denature enzymes making it easy for substrate molecules to fit into the active site.

C Low temperatures denature enzymes making it difficult for substrate molecules to fit into the active site.

D Low temperatures denature enzymes making it easy for substrate molecules to fit into the active site.

8. June/2022/Paper_ 41/No.1(b_ c)

(b) Yeast cells make the enzyme sucrase. Sucrase catalyses the breakdown of sucrose to glucose and fructose.

Enzymes are made of protein.

Explain how the shape of a sucrase molecule is related to its function.

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..... [2]

(c) The students made an extract of sucrase from yeast cells.

They investigated the activity of the sucrase extract at different pH values. They determined the rate of reaction at each pH.

They then calculated the rate of each reaction as a percentage of the fastest reaction, to give the percentage activity of sucrase.

The results of this investigation are shown in Fig. 1.2.

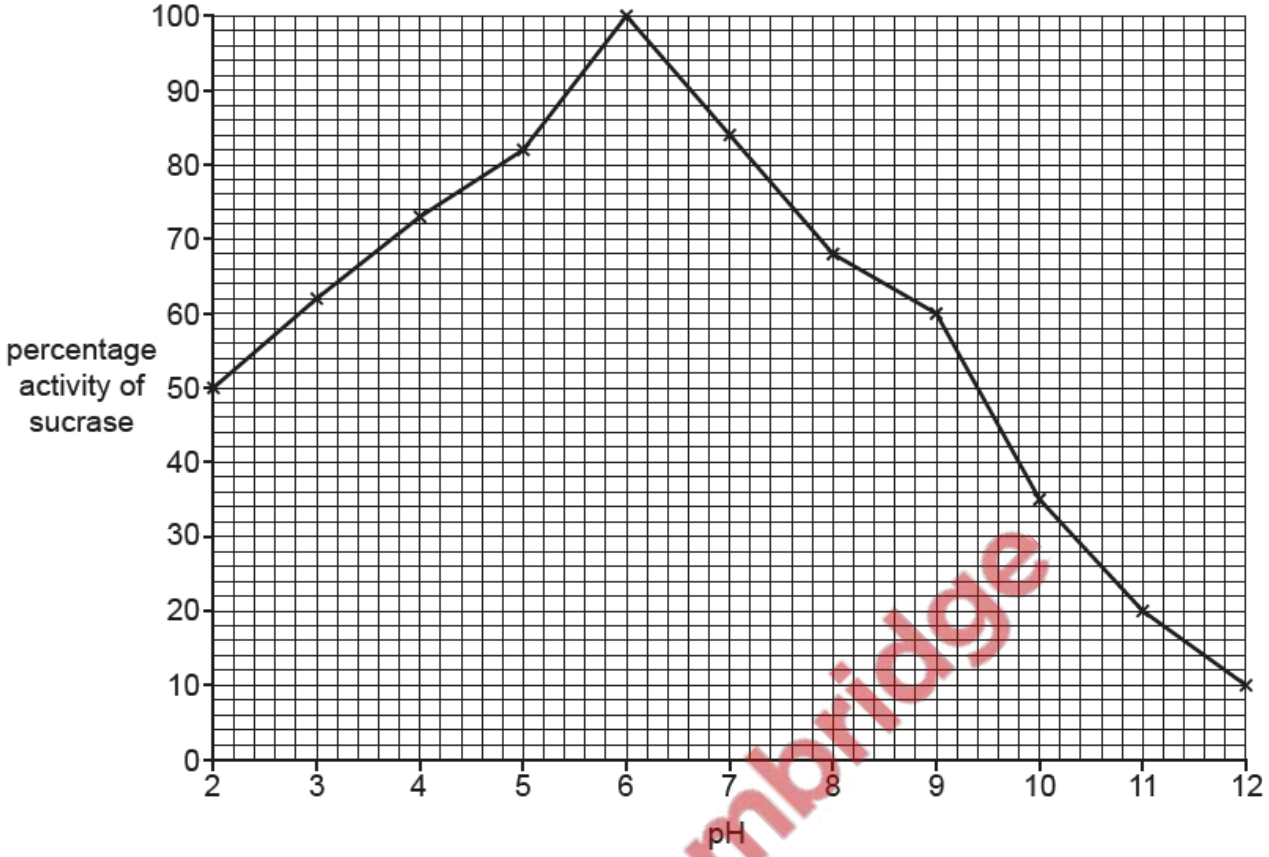

Fig. 1.2

Describe **and** explain the effect of pH on the activity of sucrase shown in Fig. 1.2.

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..... [6]

9. June/2022/Paper_ 41/No.2(b)

(b) Fig. 2.2 is a diagram that shows the double circulation of a mammal. The arrows indicate the movement of oxygen and carbon dioxide in and out of the blood.

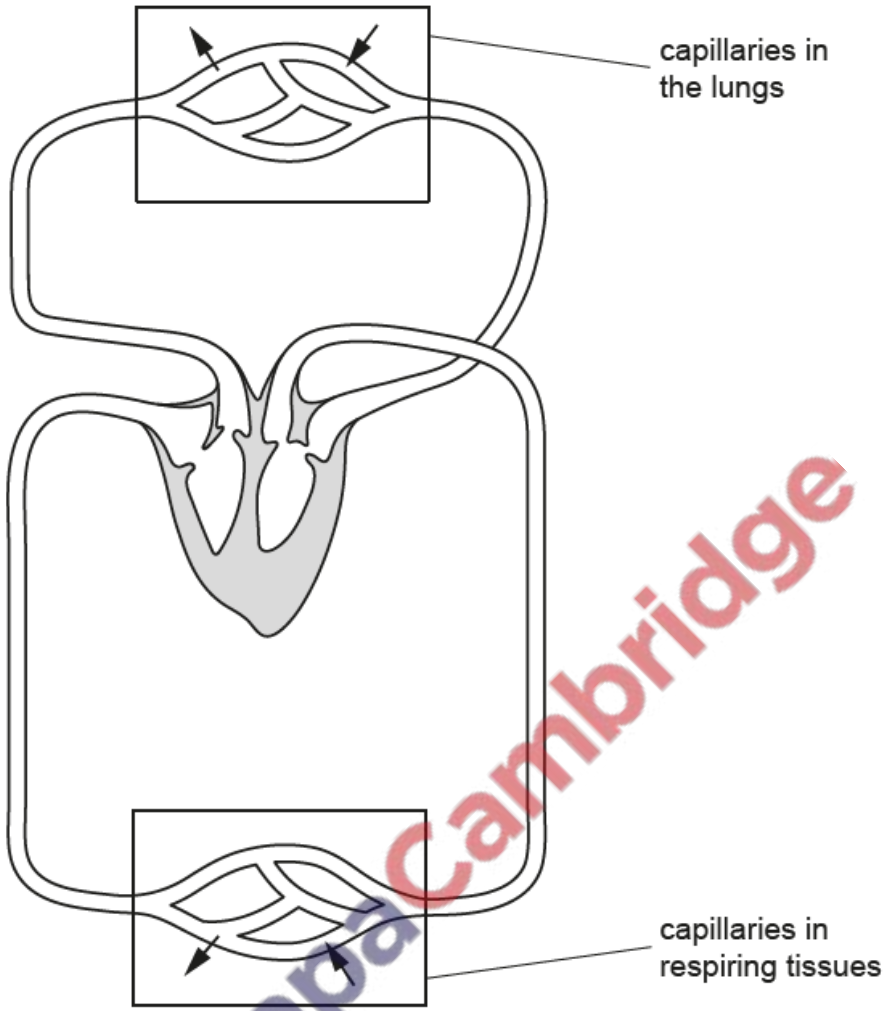

Fig. 2.2

(i) Shade the blood vessel in Fig. 2.2 that transports blood with the highest oxygen concentration. [1]

(ii) Describe the evidence shown in Fig. 2.2 that the mammal has a double circulatory system.

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..... [2]

(iii) Explain the advantages of a double circulation.

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..... [4]

10. June/2022/Paper_ 43/No.2(b _ c)

(b) Biotechnologists use enzymes to extract juice from fruit such as oranges.

Define the term enzyme.

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..... [2]

(c) Fig. 6.2 shows the results of leaving pieces of orange fruit in an enzyme solution for different lengths of time.

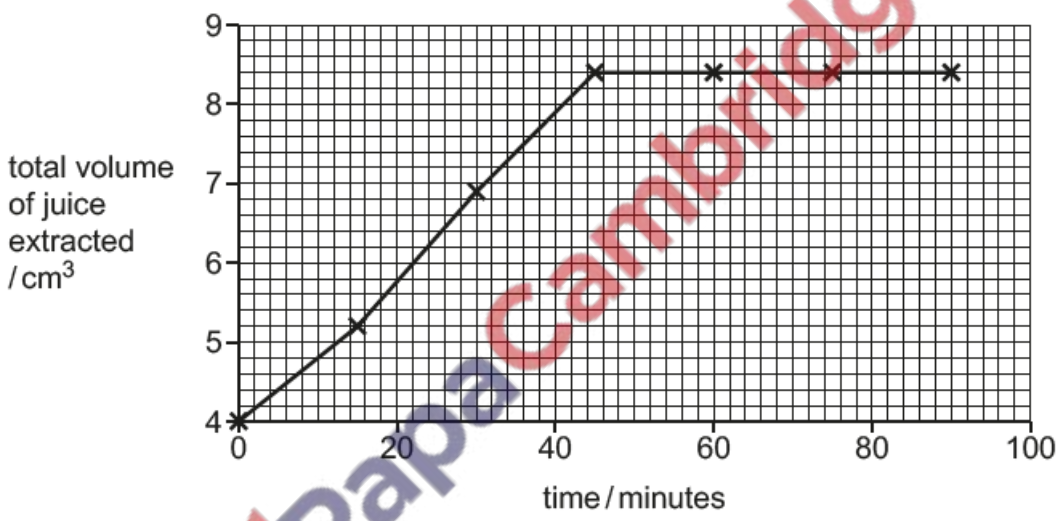

Fig. 6.2

(i) State the name of the enzyme used to extract juice from fruit.

..... [1]

(ii) Using the information in Fig. 6.2, state the optimum length of time for efficient extraction of juice from oranges.

..... [1]

(iii) State the name of the vitamin found in high concentrations in citrus fruit such as oranges.

..... [1]