2. 2018 Summer Zone 1 Paper 4 Question 1

(a) The reactions of chemical digestion are catalysed by enzymes.

Fig. 1.1 shows the stages of an enzyme-catalysed reaction.

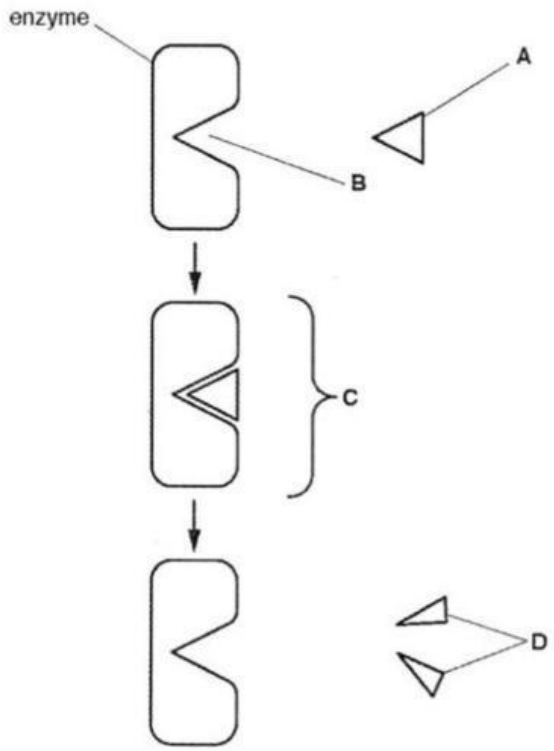


Fig. 1.1

State the names of **A** to **D** in Fig. 1.1.

A .....

B .....

C .....

D .....

[4]

LIVEWORKSHEETS

Answer Key

1. **Denature**
2. **Active site**
3. **Kinetic**
4. **Fewer**
5. **Slower**
6. **Optimum**

(b) The digestive systems of young mammals are not fully developed.

Enzymes such as amylase, maltase and protease are often added to baby food to aid chemical digestion.

(i) Complete Table 6.1 by stating the substrate and product(s) for each enzyme reaction.

Table 6.1

enzyme	substrate	product(s)
amylase		
maltase		
protease		

[3]

(ii) Suggest why the temperature of baby food must be controlled when the enzymes are added.

- High temperatures **(1)** _____ enzymes, which changes the shape of the **(2)** _____.
- At low temperatures, molecules have low **(3)** _____ energy. This leads to **(4)** _____ collisions and **(5)** _____ reactions.
- Enzymes work most efficiently at their **(6)** _____temperature.

.....

.....

..[2]

(iii) State **one** other condition that must also be controlled to optimise enzyme activity.

.....[1]

4. 2019 Summer Zone 3 Paper 4 Question 6

Fig. 6.1 is a photomicrograph of part of a cell from the pancreas that produces enzymes that are released into the small intestine.

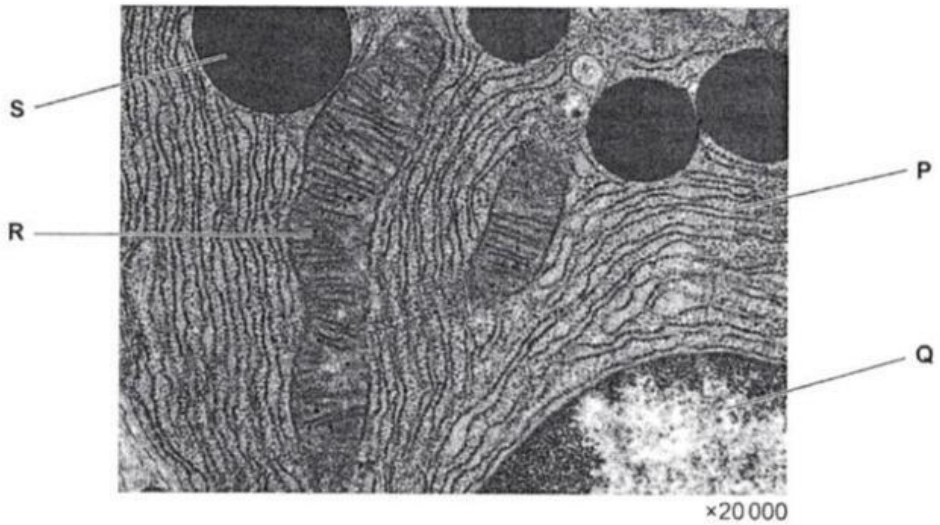


Fig. 6.1

LIVEWORKSHEETS

6. 2021 Winter Zone 2 Paper 4 Question 6

Enzymes are catalysts.

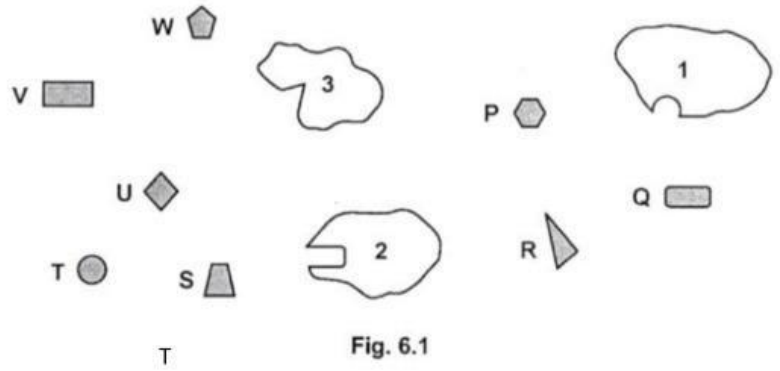
(a) Define the term catalyst.

.....

.....

..... [2]

(b) Fig. 6.1 shows diagrams of three enzymes and eight different substrates.



T

Fig. 6.1

(i) State the letter of the substrate that will be broken down by enzyme 1.

..... [1]

(ii) Explain, in terms of enzyme structure, the reason for your choice in **6(b)(i)**.

.....

.....

.....

.....

..... [2]

LIVEWORKSHEETS

(c) Table 6.1 lists some enzymes and the reactions that they catalyse.

Complete Table 6.1.

Table 6.1

enzyme	reaction
maltase	breakdown of maltose to ..glucose.....
.....	breakdown of proteins to amino acids
lipase	breakdown of fats to ..... and .....
.....	breakdown of lactose to simpler sugars
.....	insertion of a short length of DNA into a plasmid
restriction enzyme	.....

[6]

[Total: 11]

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11. 2022 Winter Zone 3 Paper 4 Question 2

(a) Digestive enzymes are secreted into the alimentary canal.

(i) As well as enzymes, other substances that are important for digestion are also secreted into the alimentary canal.

State the names of **two** of these other substances.

1 .....

2 .....

[2]

(ii) Table 2.1 summarises some facts about the enzymes that are secreted into the alimentary canal.

Complete Table 2.1.

Table 2.1

name of the enzyme	organ where the enzyme is secreted	organ when the enzyme acts	products of digestion involving this enzyme
	salivary glands		
pepsin			
	pancreas		fatty acids and glycerol
	small intestine	epithelial lining of the small intestine	

[4]

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