

25 Fig. 25.1 represents the tertiary structure of the enzyme lysozyme.

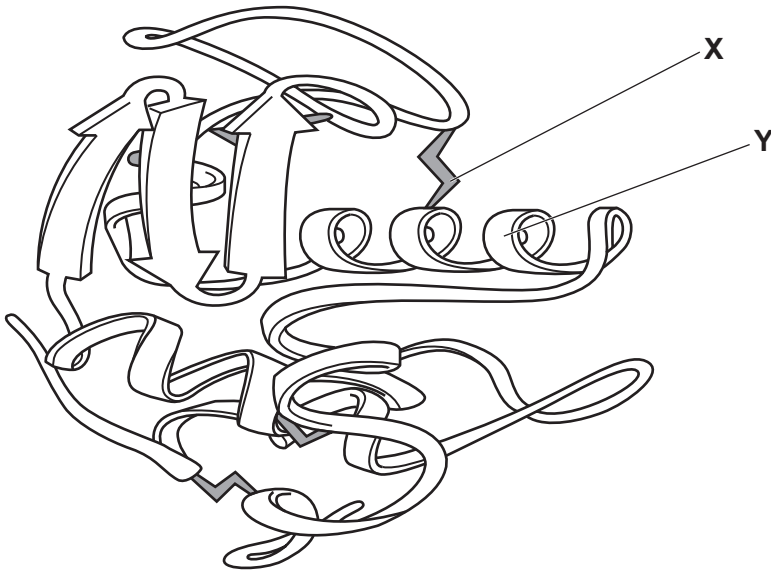


Fig. 25.1

- (a) (i) Name the covalent chemical bond labelled **X** which links two cysteine amino acids.
 [1]
- (ii) Name the structure labelled **Y** which forms part of the secondary structure of lysozyme.
 [1]
- (iii) Lysozyme consists of a single polypeptide chain of 129 amino acids.
 State which level of protein structure is **not** shown by lysozyme.
 [1]
- (b) The function of lysozyme is to break down the cell walls of bacteria.
- (i) Name the molecule that is found in the cell walls of bacterial cells.
 [1]
- (ii) Lysozyme is also known as a glycoside hydrolase.
 Suggest the type of chemical bond that lysozyme breaks and name the molecule other than the substrate that is needed for this reaction.
 Type of bond
 Other molecule needed for this reaction [2]

(c) Enzymes are affected by temperature. Fig. 25.2 shows the time course of a mammalian enzyme reaction at different temperatures.

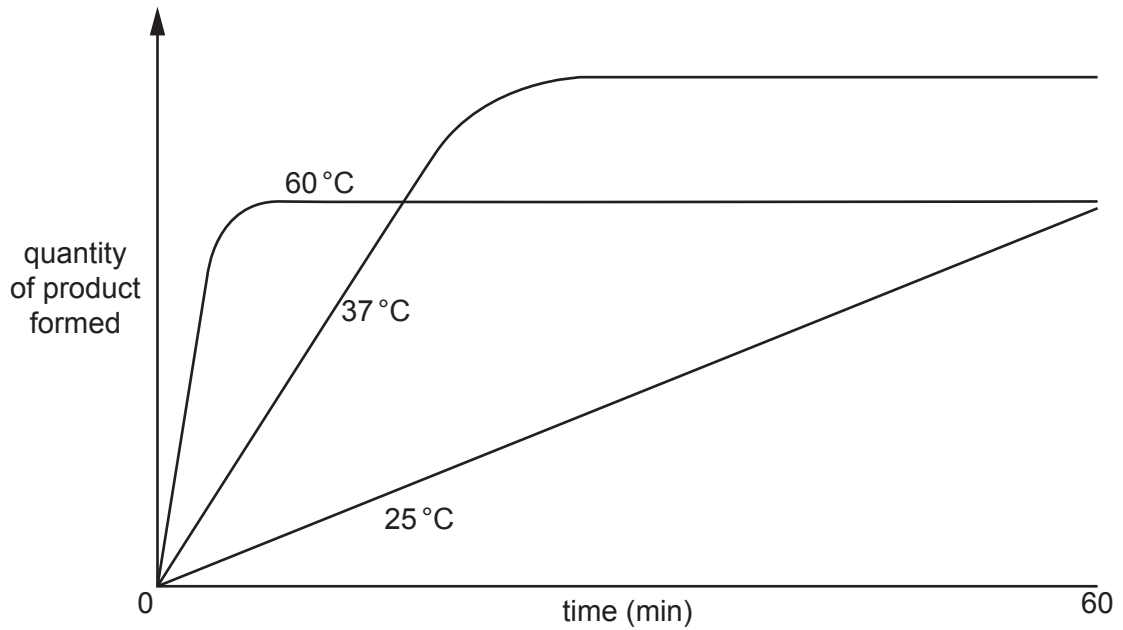


Fig. 25.2

(i) Explain why there is a difference in the shapes of the curves at 37°C and 60°C.

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..... [2]

(ii) Explain why there is a difference in the shapes of the curves at 25°C and 37°C.

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..... [2]