

Enzymes – 2021/20 GCE Biology A Component 01

1. Nov/2021/Paper_H420/1/No.4

Which of the statements about enzyme catalysed reactions is true?

- A Binding of a substrate to the active site can weaken bonds in the substrate.
- B Enzymes allow reactions to happen at a rate faster than the V_{\max} .
- C Enzymes increase the rate of reactions by increasing the activation energy.
- D Every 10 °C increase in temperature will approximately double the rate of all enzyme controlled reactions.

Your answer

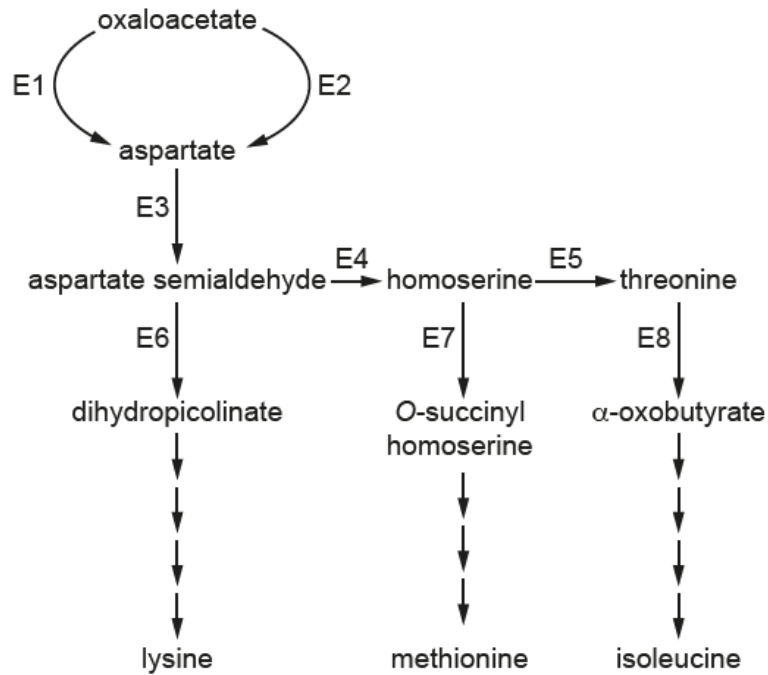
☐

[1]

2. Nov/2021/Paper_H420/1/No.5

The figure shows the metabolic pathways leading to synthesis of five amino acids: aspartate, lysine, methionine, threonine and isoleucine.

E1 to E8 represent different enzymes involved in these pathways.



Which of the options is an example of end-product inhibition?

- A aspartate inhibits E3 and E4
- B isoleucine inhibits E7
- C lysine inhibits E1 and E6
- D methionine inhibits E8

Your answer ☐

[1]

3. Nov/2021/Paper_H420/1/No.18(b)

(b) Liver is a rich source of the enzyme catalase.

The table below describes examples of three terms from the list below.

coenzyme competitive inhibition enzyme-product complex

induced-fit lock and key non-competitive inhibition

prosthetic group secondary structure tertiary structure

Complete the table by choosing a term from the list that matches each example.

Example	Term
The haem molecule bound to each polypeptide chain of catalase.	
Binding of the hydrogen peroxide substrate to catalase causes a change in the shape of the active site of catalase.	
Cyanide ions decrease the action of catalase even at high concentrations of hydrogen peroxide.	

[3]