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Chapter 11

1 message

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EDIT RESPONSE

Chapter 11

Match the enzyme class (column) with the type of reaction catalyzed (rows)

	1	2	3	4	5	6
Ligase	○	○	○	○	○	◉
Lyase	○	○	○	◉	○	○
Hydrolase	○	○	◉	○	○	○
Isomerase	○	○	○	○	◉	○
Oxidoreductase	◉	○	○	○	○	○
Transferase	○	◉	○	○	○	○

Enzymes commonly contain a regulatory mechanism. Which of the following is not an example of one of these mechanisms?

- ○ Enzyme concentration regulation
- ○ Covalent modification
- ◉ Amino acid mutation

- Allostery

Enzymes are sensitive to stereochemistry.

- True
- False

Which of the following does not accurately describe Heme groups in enzymes?

- cofactor
- prosthetic group
- cosubstrate
- coenzyme

Briefly describe how enzymes are able to catalyze chemical reactions.

They present a specific binding pocket so that they only bind to a single substrate. Upon binding, they encourage the reaction by making the activation steps easier (e.g. presenting a good nucleophile). Finally, they make the transition state more accessible by lowering the energy through some form of stabilization.

Keto-enol tautomerization is an example of which type of catalytic mechanism?

- Acid-Base
- Metal ion
- Proximity and orientation effects
- Preferential binding of transition state
- Covalent

Proline isomerization is an example of which type of catalytic mechanism?

- Metal ion
- Preferential binding of transition state
- Covalent
- Acid-Base
- Proximity and orientation effects

Catalytic triads use which amino acid as a neuclophile

serine

Please answer problem 7 at the end of Chapter 11.

87.6 kJ/mol

P. 322 $\Delta\Delta G = RT \ln(\text{rate enhancement})$

$= 8.314 (273.15 + 37) \ln 5.6 \times 10^{14}$

$\Delta\Delta G = 87,566 \frac{J}{mol} = 87.6 \frac{kJ}{mol}$

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