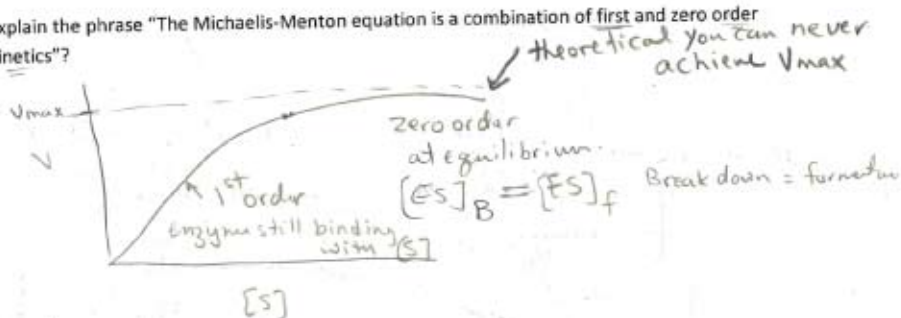


6. Explain the phrase "The Michaelis-Menton equation is a combination of first and zero order kinetics"?



7. Describe three ways in which enzymes can be regulated.

- Temperature: after a certain temp protein will breakdown. enzyme will not be able to catalyze the rxn
- PH: pepsin for example has its active site saturated at pH=2. So it works the best.
- Ionization of R group of AA of the protein.
- Conc of [S].

8. If k_2 is small, what does this tell you about K_M ? What does this tell you about k_{cat} ?

$$K_2 \lll k_1$$

$$K_M = \frac{k_{-1} + k_2}{k_1}$$

k_2 is small that means it is the rate determining step, product is not forming much. equilibrium between ES and reactant.



K_M is the binding between enzyme and substrate at low $K_M \rightarrow$ high binding.

K_2 small
 k_{cat} small