Chemistry 3785 - Fall 2003 - Quiz # 5

Name (Printed): _____,_____
(last) (first)

Signature:_____ /20 (Overall on Quiz)

1. (10 points) Both crystallographic and kinetic evidence indicated that a newly isolated enzyme required for urine formation in the Kidney had only a single active site and, also, that it had no separate regulatory site. Using text and graphics, discuss (in the space outlined by the box) the two types of inhibition that it might still exhibit. Be sure to make clear how these two types of regulation could be distinguished from one another experimentally. If you were designing a medication to temporarily suspend urine formation during bladder surgery, which of these two types of inhibition would you choose for your medicine's mode of activity and why would you choose this type of inhibition for it?

/10 (Question #1)

Name (Printed): _____,_____
(last) (first)

2. (10 points) Using text and graphics, discuss (in the space outlined by the box) the structure of free $NAG_6$ and of the $NAG_6$ substrate bound to Lysozyme including the nature of the binding interaction. Include in your answer a discussion of how the exact structure of this enzyme-substrate complex predisposes the hexamer to cleave where it does.[1]

/10 (Question #2)

[1] Note: I am **NOT** looking for you to draw or explain the steps of mechanism of this reaction in this question.