Exam II Study Sheet - All about enzymes!!

Chapter 7 Hemoglobin and Myoglobin

Understand the following:
- basic structures of hemoglobin and myoglobin
- heme environment
- binding curves for Hb and Mb (what make the shape?)
- T to R transition and its affect on O2 binding
- effect of BPG and pH on O2 binding

Chapter 8 Kinetics

Understand concept of enzyme catalysis and transition state binding
Be able to draw an energy diagram for an enzyme catalyzed reaction
Understand basic binding equilibria
Understand the steady-state and Michaelis-Menten assumptions
Know and apply the Michaelis-Menten equation
Understand \( K_m, K_D, V_{max}, k_{cat} \), catalytic efficiency
Understand the Lineweaver-Burk plot
Be able to recognize competitive, uncompetitive, noncompetitive inhibition
Be able to determine \( K_i \) from Lineweaver-Burk data
Understand what make a good inhibitor

Chapter 9 (section 9.1 only) Proteases

Covalent mechanism
Know and be able to draw either the mechanism for serine or cysteinyl protease
Understand the catalytic triad and oxyanion hole

Noncovalent mechanism
Know and be able to draw either the mechanism for aspartyl or metalloproteinase

Handout Lysozyme

Pick one mechanism (either carbocation or covalent intermediate).
- Be able to explain or draw your mechanism.
- Be able to present the evidence supporting your mechanism.
- Be able to refute evidence against your mechanism.