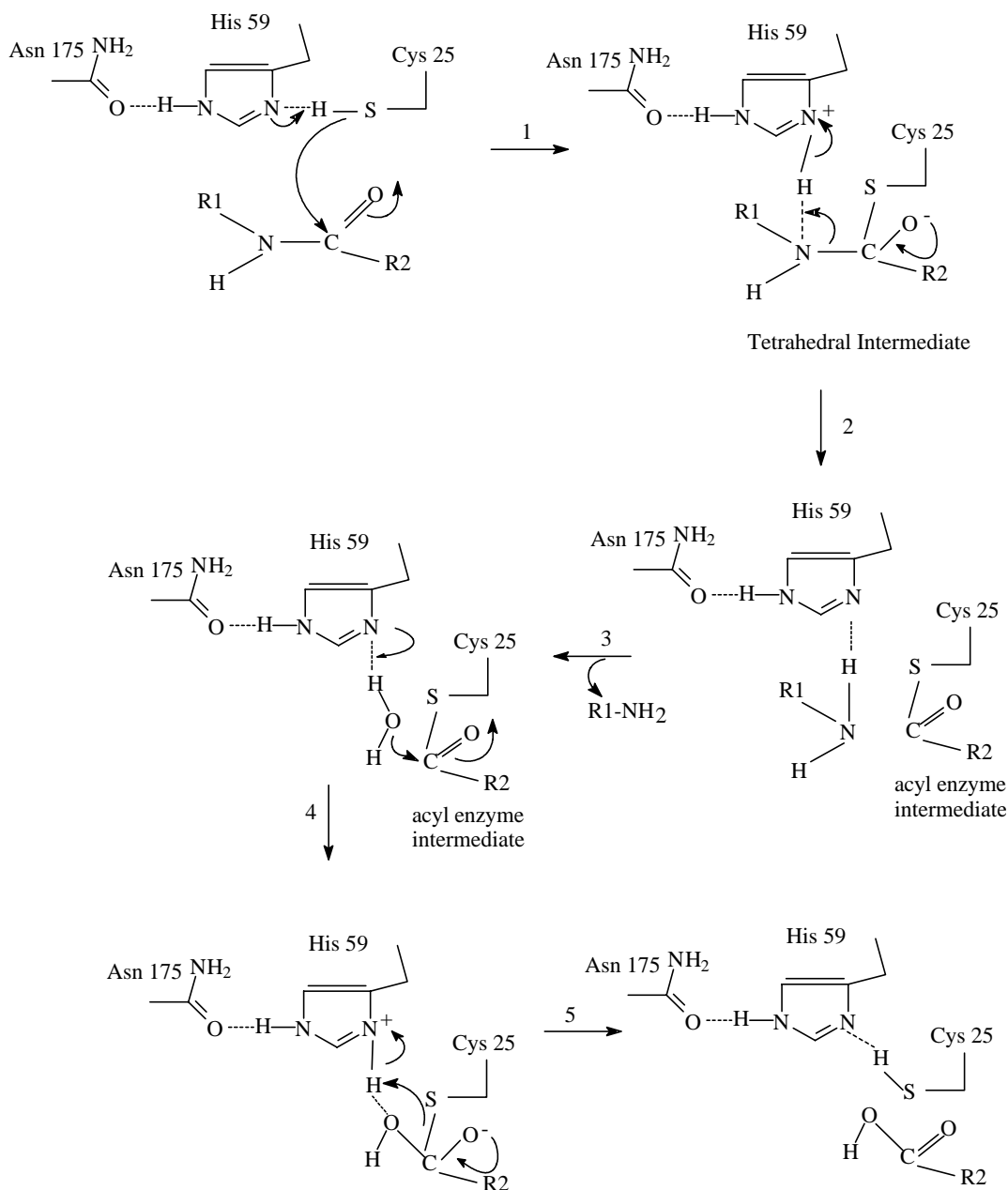


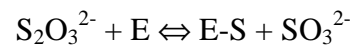
Chem 4540 Enzymology Winter 2001
Problem Set #5 ANSWERS

1. It may be functional depending upon whether there is space for the side chains of substrate proteins or peptides to nestle into. Certainly substrate specificity would change where from positively charged side chains to smaller, more negatively charged residues.
2. Often the release of water during the conformational change initiated by binding the substrate provides a hydrophobic environment to stabilize the nonpolar side chain of the substrate.

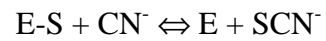
3.



9. (a) Step 1:



Step 2:



(b) Yes, it does support the hypothesis of electrostatic interaction. If an interaction between a negatively charged thiosulfate and a positively charged functional group on the enzyme occurred, the addition of a neutral salt would weaken the interaction by competition.