

Exam 1 Topics/Skills

Acid-base behavior of functional groups and molecules, and the structural basis for it.

Predict the outcome and write the products of a proposed acid-base reaction.

New: Know the biochemical functional groups

Draw an energy diagram of an acid-base reaction, or an idealized mechanism. Use it to explain a trend or mechanistic outcome.

Follow (given) mechanistic arrows to predict the products.

Add mechanistic arrows to a series of (given or mostly given) structures to explain the structural changes.

Explain various alternative reaction outcomes using mechanistic and structural principles; e.g. a certain path is followed because its carbonium ion is more stable than some other path.

Know (recognize, be able to explain, be able to draw a simple example) of the archetype/idealized mechanisms we have studied: $A_{\text{D}}\text{E}$, $S_{\text{N}}1$, $S_{\text{N}}2$, nucleophilic addition to a carbonyl.

Understand/be able to explore active sites and explain how they "work" (you will be required to use Chimera to answer some questions).

The material from Chapter 2 will not be explicitly tested, but I expect you to know it.