Focus on understanding mechanism steps for the final exam.
Refer to diagrams where provided in notes, as well as to homework and previous tests.

Practice drawing reacting atoms with all bonds, lone pairs, charges, and curved arrows.
O's always have 1-3 lone pairs, N's always have 0-2 lone pairs, C^{-1} has one lone pair.
Understand how resonance is an interaction between lone pairs and Π bonds.
Pay attention to details like where each atom is located and what it is bonded with.

- Diehls-Alder cycloaddition (Ch 14)
  pericyclic mechanism between dienophiles (w/ EWG) and dienes (s-cis)
- Aromaticity of cyclic conjugated molecules (Ch 15)
  resonance and molecular orbitals in aromatic molecules
- Electrophilic aromatic substitution (Ch 16)
  nitration (and formation of nitronium cation)
  Friedel-Crafts alkylation / acylation (with formation of cations)
- Alcohols (Ch 17)
  dehydration of alcohols (E1 with acid, E2 with POCl3 and base)
  conversion to halides (SN1 with acid, SN2 with PBr3)
- Ethers (Ch 18)
  Williamson ether synthesis (S_N2 with alkoxide and 1^o R-X)
  ether cleavage (protonation with acid , followed S_N2 / S_N1)
- Aldehydes and Ketones (Ch19)
  conversion to imines with NH_2R (Add Nu to carbonyl, remove H_2O, deprotonate N)
- Carboxylic Acids and Nitriles (Ch 20)
  basic hydrolysis of a nitrile (conversion to amide, then carboxylic acid)
- Acid Derivatives (Ch 21)
  converting acid chloride to ester (w/ alcohol) or amide (w/ amine)
- Alpha Substitution (Ch 22)
  acetoacetate synthesis with hydrolysis and decarboxylation
- Carbonyl Condensations (Ch 23)
  Claisen condensation (enolate with resonance, add enolate to 2^{nd} carbonyl, expel LG)
- Amines (Ch 24)
  Sandmeyer sequence (nitration, reduction, diazotization, replacement with OH)