Listed below are the major topics of chapters 8 and 10. Keep in mind that this is only a review sheet. We've covered more material and more details than can be confined to a single page.

Chapter 8:

Markovnikov's rule; draw mechanisms, predict products, and give reagents for the following electrophilic addition reactions: (1) addition of strong inorganic acids; (2) hydration; acid catalyst required; carbocation rearrangements; (3) hydroboration/oxidation; anti-Mark addition of H and OH; syn addition; (5) halogenation; bromonium ion intermediate attacked by a nucleophile; anti addition; halohydrins

give reagents and/or predict products for the following: (7) dihydroxylation; syn addition of two OH's; (8a) ozonolysis

You are not responsible for these reactions (4) oxymercuration/reduction, (6) cyclopropanation, and (8b) KMnO4 oxidative cleavage.

Chapter 10:

what is a radical; what is bond dissociation energy and how does it relate to radical stability; radical stability parallels carbocation stability (3° > 2° > 1° > CH3); the carbon that has the unpaired electron is sp²; the overall equation for radical halogenation of alkanes (what are the reactants, heat or light is necessary, and products); be able to write a radical chain mechanism for radical halogenation of alkanes (initiation; propagation; termination); radical bromination of alkanes is very selective – 3° hydrogens are replaced much faster than 2°, which are replaced much faster than 1°; radical chlorination is much less selective so a mixture of chlorinated products is usually obtained; predict stereochemical outcomes of radical halogenation reactions; radical addition of HBr to double bonds appears anti-Markovnikov; synthesis: radical halogenation of alkanes produces alkyl halides – this is the only reaction you know where an alkane is a reactant.

Suggested Ch 10 problems: 10.23, 10.24abc, 10.25a, 10.27, 10.28

Use reactions from Ch 6-8, 10 in multi-step syntheses.

Comments on the final exam:

The final exam will be 5 to 5.5 pages in length. Approximately 15-20% of the exam will focus on the Ch 8 material and 5-10% will focus on Ch 10 material. A majority of the exam will focus on material in chapters 6-8, incorporating concepts from previous chapters. You will be allowed to use model kits on the exam. You will have a periodic table, pKₐ table, and IR table in the exam materials.