Ch. 14: NMR:
$^{13}$C NMR (Table will be provided)

Ch. 13: Mass Spectroscopy
Interpretation of a spectrum
assignment of simple fragments

Ch. 10/11: Alkenes and Alkynes
For each reaction below, you should know the mechanism, the regioselectivity (if appropriate), and the stereoselectivity (if appropriate).

Acid catalyzed additions
   HX
   $\text{H}_2\text{O}^+$
Hydroboration / Oxidation
Addition of $\text{X}_2$
Addition of $\text{X}_2$ in presence of another nucleophile
Terpenes

Ch. 12
Hydrogenation
   $\text{H}_2$, Pd/C
   $\text{H}_2$, Lindlar
   Li/NH$_3$
Epoxidation of alkenes
Dihydroxylations
   OsO$_4$
Oxidative cleavage
   O$_3$

Ch. 16: Conjugated systems
allylic systems (radicals, cations, anions): resonance, molecular orbital description
reactivity of allylic position (ease of formation of radical, cation, anion)
conjugated systems: M.O. description
1,4-additions
kinetic vs. thermodynamic control
Diels-Alder (starting materials, products, stereochemistry, regiochemistry, reactivity
dependent on HOMO/LUMO gap)