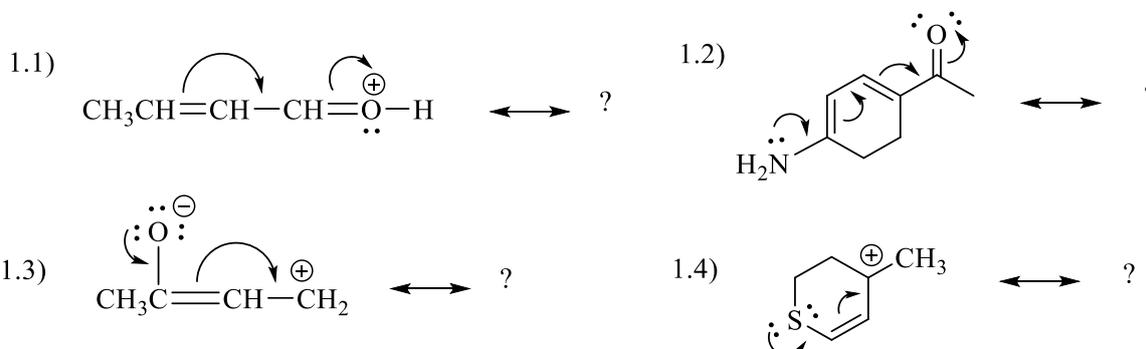


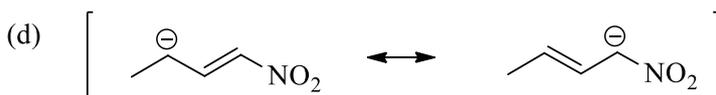
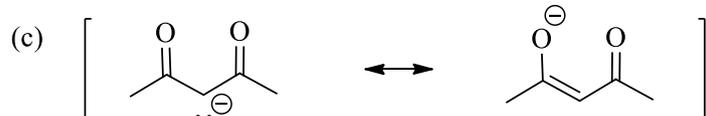
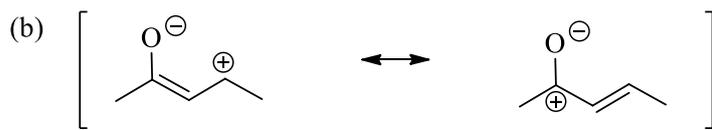
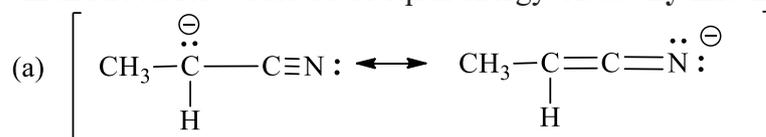
### Problem Set 4.1

Introduction to organic reactions and their mechanisms

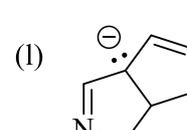
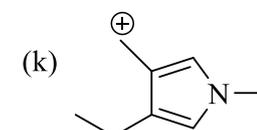
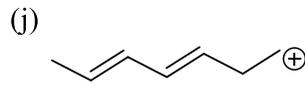
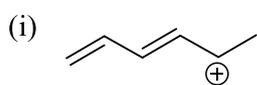
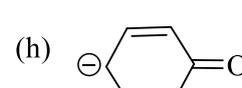
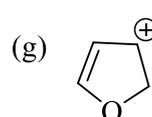
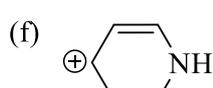
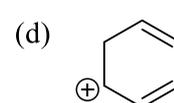
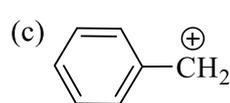
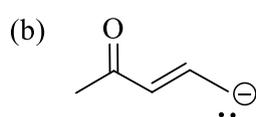
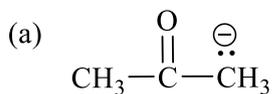
- 1) **Write the resonance structure** that would result from moving the electrons as the curved arrows indicate (Be sure to include formal charges if needed), and **assign the more important structure**.



- 2) In the following sets of resonance forms, label the major and minor contributors and state which structures would be of equal energy. **Add any missing resonance forms.**



- 3) Draw the all resonance structure and resonance hybrid to show the delocalization of charges in the following ions, and designate the one that would contribute most to the hybrid (major and minor contributors) and explain your choice:



4) For each pair of ions, determine which ion is more stable. Use resonance forms to explain your answers.

