HW # 10 (this WH won't be graded and is being assigned simply to give you experience working problems related to material we covered in the last few lectures.)

1. Why is the overall splitting of the Huckel orbitals of an infinite chain 4*beta?

2. The LUMO of CO_2 is degenerate. What happens to these degenerate orbital as the molecule is bent?

3. Formaldehyde has two symmetry planes. Convince yourself that the a1 orbitals (see Fig 13.16) do not change sign under reflection in either plane and that the b1 and b2 orbitals change sign under reflection of one or the other of these planes. A2 orbitals, not shown, change sign under both reflection operations.

4. When can absorption and emission spectra be identical?