

Assignment #6**Required Problems (Due May 2nd by the end of the day)**

- Draw the $3p_z$ and $3p_x$ atomic orbitals.
 - From the atomic orbitals, form the molecular orbitals, $\psi = 3p_z + 3p_z$, $\psi = 3p_z - 3p_z$, $\psi = 3p_x + 3p_x$, and $\psi = 3p_x - 3p_x$. (Draw them out.)
 - Determine which of these are σ and π , which are bonding and anti-bonding, and which are gerade and ungerade. Label your drawings from part b appropriately.
- Determine the molecular term symbols for H_2 , H_2^+ , Li_2 , B_2 , O_2 , and O_2^+ . Determine the ground state symbol for each.
- From McQuarrie & Simon, Chapter 9 problems: 7, 12, 19 (support with electron configurations), 20, 26. Read 9-3.
- Problems from Chapter 10 of McQuarrie & Simon: 12, 16-18, 30, 34**
(* ** extra credit for solving the determinantal equation – I suggest using Mathcad **)