M: chapter 7

2. molecules survive if they are lower in energy than separate atoms. Bond strength is measured with thermodynamics and explained through quantum theory.

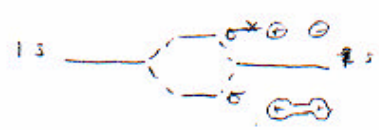
3. Electrons can be described as waves. When the waves constructively interfere, they bond (more electron density is between nuclei). When they interfere ~~bond~~ destructively, less electron density is between nuclei (antibonding).

4. (A) The amplitude of the wavefunction is a number, the ψ^2 is a probability that tells us the chance of finding an electron somewhere.

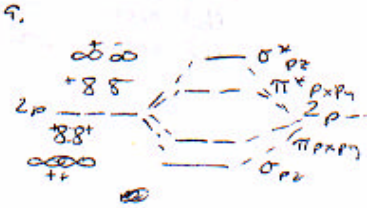
(B) yes: $\psi = \psi_A + \psi_B$ (bonding) or $\psi = \psi_A - \psi_B$ (antibonding).

7. (C) The distribution is symmetric w/r/t the two nuclei (B) No, homonuclear diatomics cannot possess a permanent dipole.

8.



9.



10. (A) All heteronuclear diatomics do not symmetrically share electron density. (B) They do possess permanent dipoles