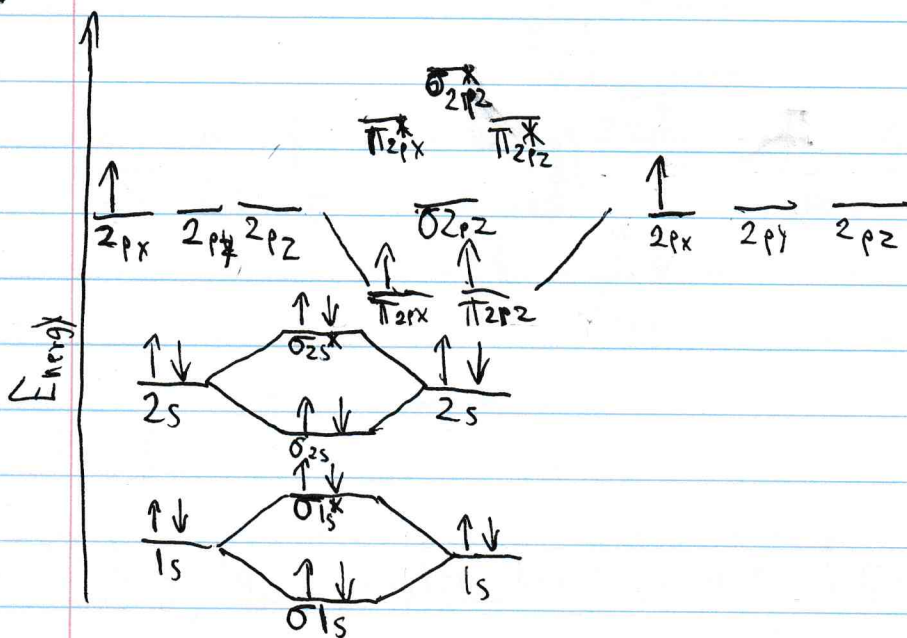


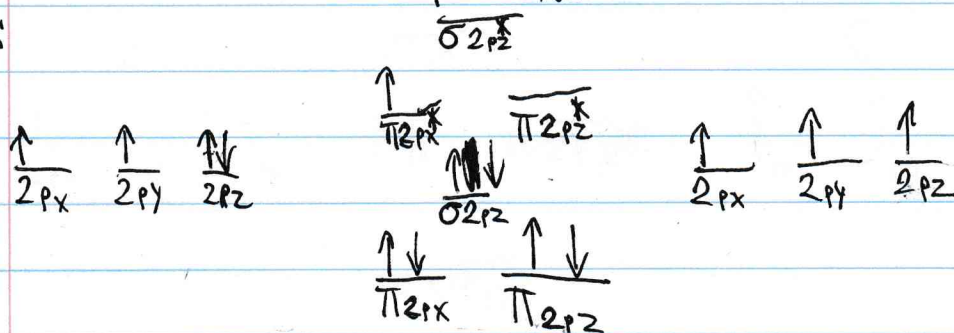
Lecture 13 Problems

Problem 1



Problem 2

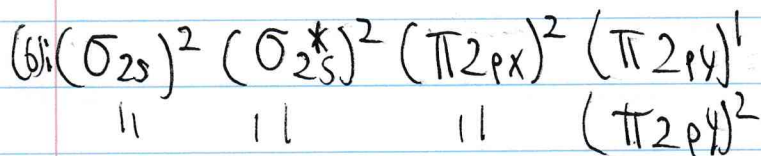
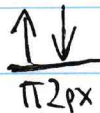
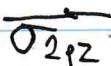
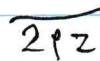
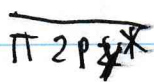
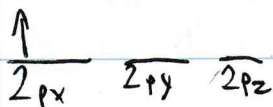
(a):



(b) 2.5

(c) N_2 , since greater bond order implies shorter bond length

OK
PZ



(d): BC^+ is stronger since $2 \geq 1.5$ of BC .

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Problem 4

(a): $(\sigma_{3s})^2 (\sigma_{3s}^*)^2 (\sigma_{3p_z})^2 (\pi_{3p_x})^2 (\pi_{3p_y})^2 (\pi_{3p_x}^*)^2 (\pi_{3p_y}^*)^1$
 paramagnetic due to $(\pi_{3p_x}^*)^1$

(b): $(\sigma_{2s})^2 (\sigma_{2s}^*)^2 (\sigma_{2p_z})^2 (\pi_{2p_x})^2 (\pi_{2p_y})^2 (\pi_{2p_x}^*)^1$
 paramagnetic due to $\pi_{2p_x}^*$.