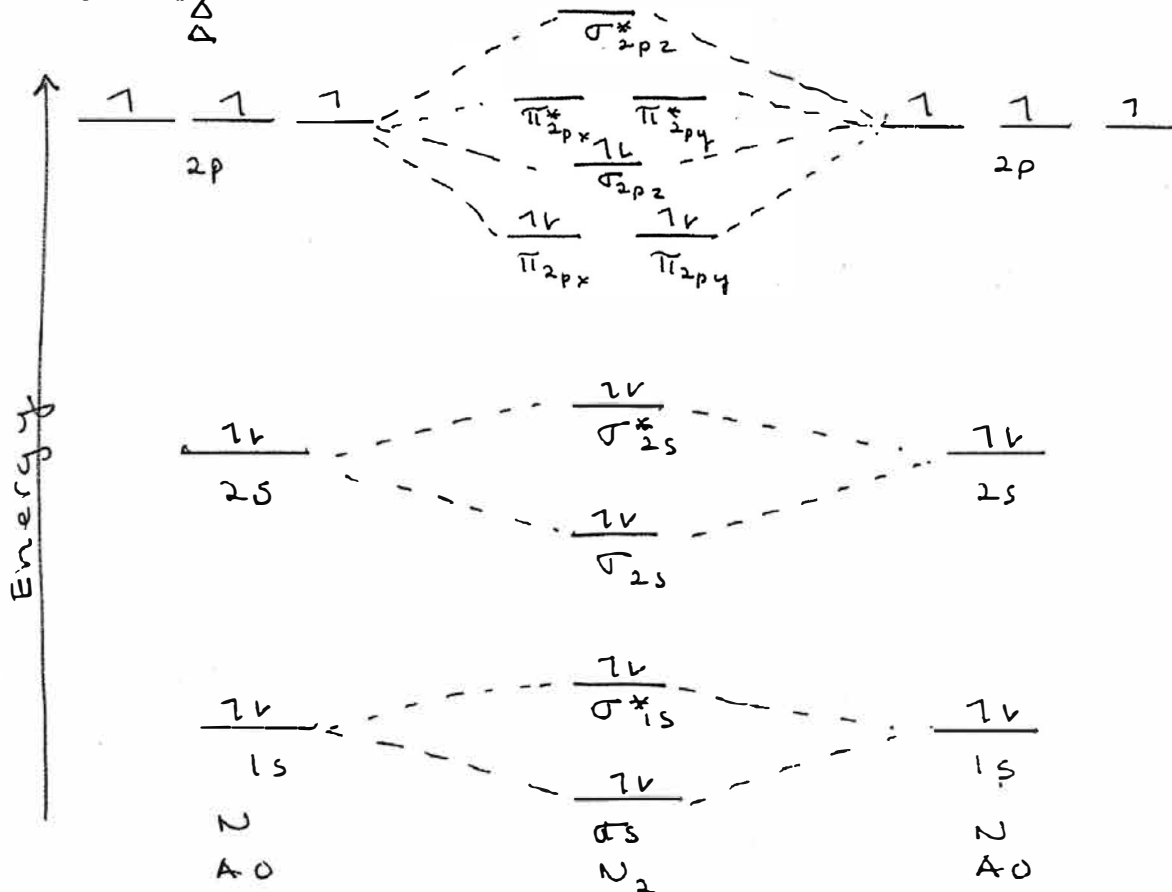
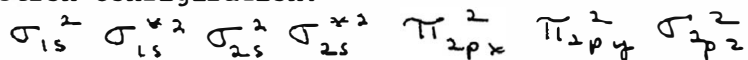


Draw the Molecular Orbital Energy level diagram for N<sub>2</sub>

- Large 2s-2px interaction



a. Electron Configuration:



b. Bond Order:

$$BO = \frac{1}{2} (10e^- - 4e^-) = 3$$

c. Number of unpaired electrons and magnetic properties:

↳ 0 diamagnetic

d. Bond Length short

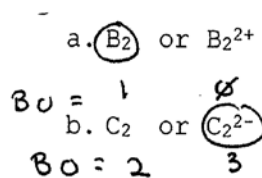
e. Bond Dissociation Energy: high

f. Bond Strength: high

} BO = 3

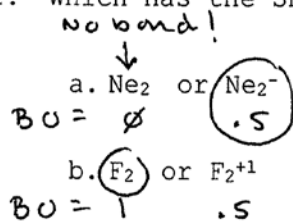
Problems:

1. Which has the Highest Bond Energy? Why?



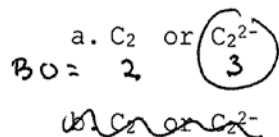
Bond Energy  $\propto$  Bond order

2. Which has the Shortest Bond Length? Why?



Bond length  $\propto \frac{1}{\text{Bond order}}$

3. Which has the Lowest Bond Dissociation Energy? Why?



Bond dissociation Energy  $\propto$  Bond order

