Quiz 11

1) (7 pts) Create an MO diagram for CN (i.e. sketch the locations of the energy levels and label each level both with the type of molecular orbital – σ, π, σ*, or π* – and also the type of atomic orbital it originated from – 1s, 1p, 2s, or 2p). Don’t forget to put the appropriate number of valence electrons into the diagram. Hint: the CN state ordering is the same as the N₂ state ordering.

2) (3 pts) Write out the valence electron configuration for the CN molecule (just as your CAPA set did in problems 8 and 9).

\[(\pi_{2s})^2 (\sigma^*_{2s})^2 (\pi^*_{2p})^4 (\sigma_{2p})^1\]

I didn't ask this, but the bond order is 2.5