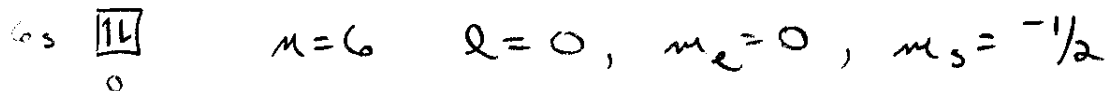


Quantum Chemistry 3

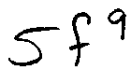
1. A) What is the last orbital term filled in the Ba atom?



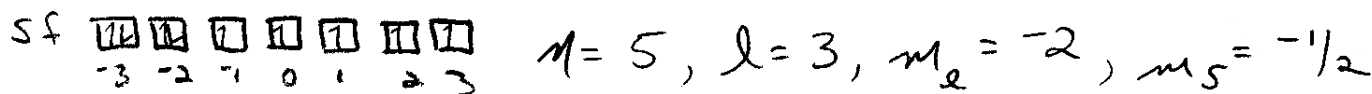
B) Write the full set of quantum numbers for the last electron to fill in the Ba atom's ground state



2. A) What is the last orbital term filled in the Cf atom?

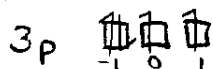


B) Write the full set of quantum numbers for the last electron to fill in the Cf atom's ground state

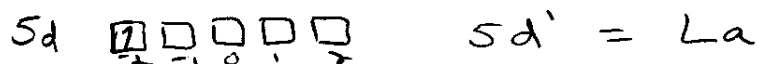


3. In each case, what atom's outermost electron would have the following set of four quantum numbers?

A) $n=3, l=1, m_l=-1, m_s=-\frac{1}{2}$ $3p^4 = S$



B) $n=5, l=2, m_l=-2, m_s=+\frac{1}{2}$



C) $n=1, l=0, m_l=0, m_s=-\frac{1}{2}$



4. Write abbreviated electron configurations for the following atoms and ions in the ground state.

