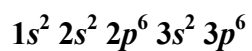


- Write the ground state electron configuration of the Ca^{2+} cation.



List the quantum numbers (n, l, m_l, m_s) that describe any one of the electrons in the ground state Ca^{2+} cation.

$1s^2$: $n = 1, l = 0, m_l = 0$ and $m_s = +\frac{1}{2}$ or $-\frac{1}{2}$

$2s^2$: $n = 2, l = 0, m_l = 0$ and $m_s = +\frac{1}{2}$ or $-\frac{1}{2}$

$2p^6$: $n = 2, l = 1, m_l = 1, 0$ or -1 and $m_s = +\frac{1}{2}$ or $-\frac{1}{2}$

$3s^2$: $n = 3, l = 0, m_l = 0$ and $m_s = +\frac{1}{2}$ or $-\frac{1}{2}$