

1. The electron in a hydrogen atom is known to be in a 4d state.

What is its  $n$  quantum number?

What is its  $\ell$  quantum number?

What are the possible values for the other quantum numbers ( $m$  and  $m_s$ )?

2. If an electron is in a state with  $n=5$  and  $\ell=0$ , write the state it's in (using the number-letter nomenclature):