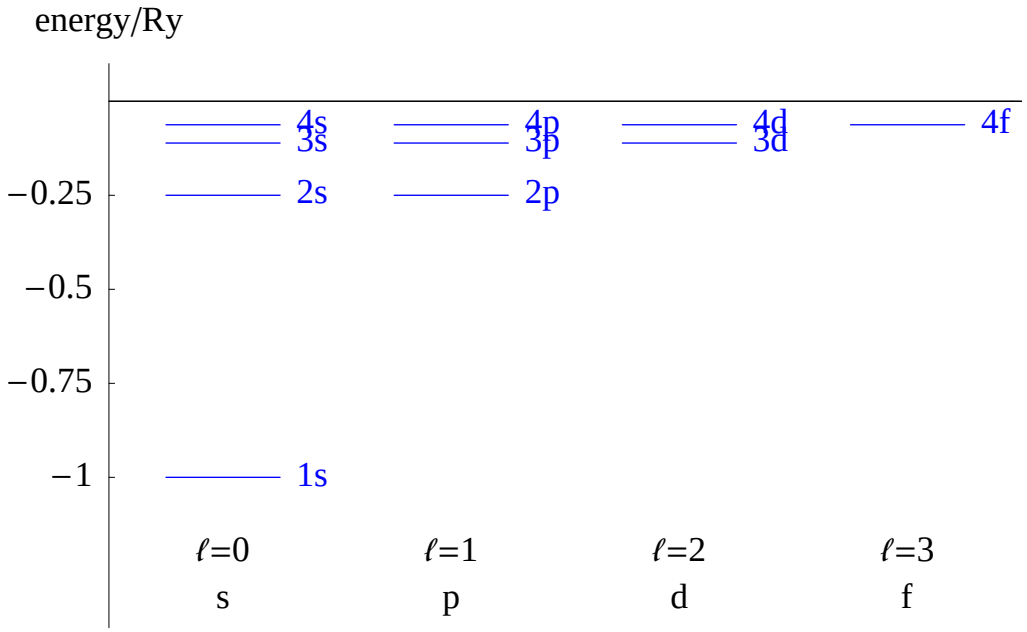
1. The energy level diagram for a hydrogen atom ($Z = 1$) is shown below. Four energy levels are shown, which correspond to the principal quantum number n equal to 1, 2, 3, 4.
For $n = 1$, there is the 1s state.
For $n = 2$, there are the 2s and 2p states.
For $n = 3$, there are the 3s, 3p and 3d states.
For $n = 4$, there are the 4s, 4p, 4d and 4f states.



2. The radial wave functions $R_{n\ell}(r)$ for a hydrogen atom ($Z = 1$) are shown in the graphs. Note these features: (i) 1s, 2p, and 3d have no radial nodes; 2s and 3p have one radial node; 3s has two radial nodes. (ii) The s, p, and d states behave as r^0, r^1, and r^2, respectively, as $r \to 0$.