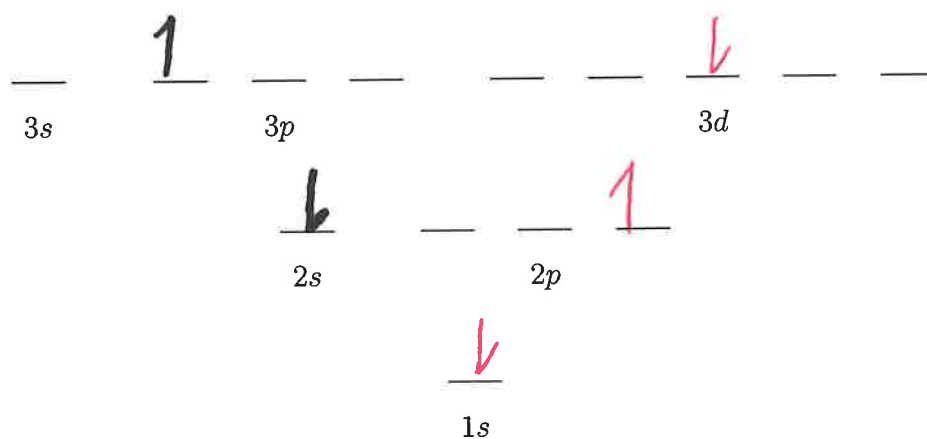


## Quiz 8.3 – Quantum Numbers

Name: Key

Below is the hydrogenic atom energy level diagram (which only applies for atoms with 1 electron). Two different possible electron states are shown.



## Question 1 (2 points)

Give the four quantum numbers for each of the two electrons shown on the diagram above

$$n=3$$

$$l=1$$

$$m_l = -1$$

$$m_s = +1/2$$

$$n=2$$

$$l=0$$

$$m_l = 0$$

$$m_s = -1/2$$

## Question 2 (3 points)

On the diagram above, draw electrons with the following quantum numbers:

- $n = 2, l = 1, m_l = 1, m_s = \frac{1}{2}$
- $n = 3, l = 2, m_l = 0, m_s = -\frac{1}{2}$
- $n = 1, l = 0, m_l = 0, m_s = -\frac{1}{2}$