

Problem-Solved Example 32

a) Can an electron has quantum numbers of $n=2$, $l=2$ and $m_l=2$. Explain.

b) Given 6 sets of quantum numbers, which one is allowed? Why not?

(i) $n=2$ $l=1$ $m_l=0$ $m_s=+\frac{1}{2}$

(ii) $n=2$ $l=3$ $m_l=+2$ $m_s=-\frac{1}{2}$

(iii) $n=2$ $l=0$ $m_l=-1$ $m_s=+\frac{1}{2}$

(iv) $n=3$ $l=1$ $m_l=-1$ $m_s=-\frac{1}{2}$

(v) $n=3$ $l=3$ $m_l=0$ $m_s=+\frac{1}{2}$

(vi) $n=4$ $l=2$ $m_l=+3$ $m_s=-\frac{1}{2}$

Solution



