• Give the ground-state electron configuration of the aluminium atom.	**Marks 2**
$1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^1$ or [Ne] $3s^2$ $3p^1$	
Provide one set of valid quantum numbers (n, l, m_l, m_s) for the highest energy electron.	
For the $3p^1$ electron, there are six possible sets: • $n = 3, l = 1, m_l = 1, m_s = +½$ • $n = 3, l = 1, m_l = 1, m_s = -½$ • $n = 3, l = 1, m_l = 0, m_s = +½$ • $n = 3, l = 1, m_l = 0, m_s = -½$ • $n = 3, l = 1, m_l = -1, m_s = +½$ • $n = 3, l = 1, m_l = -1, m_s = -½$	