

Name _____

Quantum Numbers
AP Chemistry II

1.
 - a. For $n = 4$ what are the possible values for l ?
 - b. For $l = 2$, what are the possible values of m_l ?
2. Give the numerical values of n and l corresponding to each of the following designations:
 - a. $3p$
 - b. $2s$
 - c. $4f$
 - d. $5d$
3. Give the values for n , l , and m_l for
 - a. each orbital in the $2p$ subshell
 - b. each orbital in the $5d$ subshell
4. Which of the following represent impossible combinations of n and l : $1p$, $4s$, $5f$, and $2d$.
5. Which of the following are permissible sets of quantum numbers? For those that are permissible, write the appropriate designations for the subshell.
 - a. $n = 2, l = 1, m_l = 1$
 - b. $n = 1, l = 0, m_l = -1$
 - c. $n = 4, l = 2, m_l = -2$
 - d. $n = 3, l = 3, m_l = 0$