

Shells, Subshells, and Quantum Numbers

What is the maximum number of electrons that can be held in the following principal energy levels?

$n = 1$ _____ $n = 2$ _____ $n = 3$ _____

$n = 4$ _____ $n = 5$ _____ $n = 6$ _____

Indicate the number of subshells in each principal energy level as well as the letter designation of each subshell.

$n = 1$ _____ $n = 2$ _____ $n = 3$ _____ $n = 4$ _____

What is the maximum number of electrons that can reside in each of the following subshells?

s _____ p _____ d _____ f _____

What is the maximum number of electrons that can be held in an orbital? _____

Indicate if energy is absorbed or released:

$n = 2 \rightarrow n = 4$ _____ $n = 3 \rightarrow n = 2$ _____

$n = 6 \rightarrow n = 7$ _____ $n = 4 \rightarrow n = 2$ _____

An s subshell has $l =$ _____

A p subshell has $l =$ _____

A d subshell has $l =$ _____

An f subshell has $l =$ _____

If $l = 0$, $m_l =$ _____

If $l = 1$, $m_l =$ _____

If $l = 2$, $m_l =$ _____

If $l = 3$, $m_l =$ _____