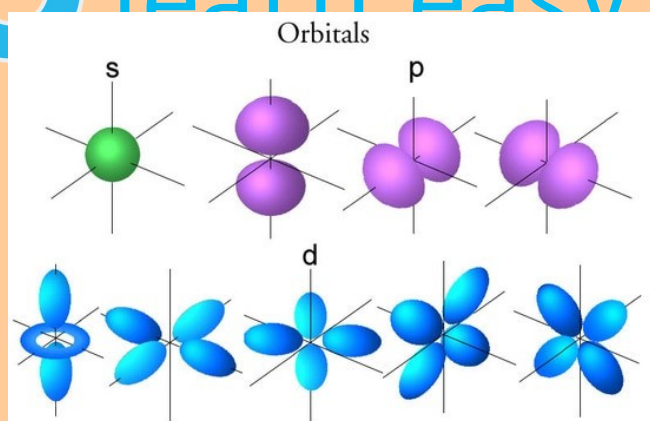


Chapter 06

Structure of atom

Number of orbitals in the subshell with a particular ' l ' value. Orbitals in the subshell belonging to the same shell process, same energy and they are called as **degenerated orbitals**. Any three or four orbitals are degenerated, it means they have equal energy. So p_x , p_y and p_z will have equal energy.

The ' s ' orbital is spherical in shape and ' p ' orbital is dumbbell shaped. Next comes ' d ' orbital. ' d ' orbital looks like a double dumbbell. It means two dumbbells crossing each other. You can see the pictures here. You can see the picture here to visualize how these orbitals look. ' p ' orbitals, ' s ' orbitals and ' d ' orbitals.



Spin Quantum Number:

Each shell ' s ' orbital has two electrons, ' p ' orbital with three subshells has six electrons and ' d ' orbital with five subshells has ten electrons so each subshell can accommodate two electrons. Now the spin quantum number decides the orientation of the

electron. An electron can spin in clockwise direction and anticlockwise direction.

Each electron has two possibilities. It can be plus half, it can be minus half, plus half is clockwise rotation, minus half is anticlockwise rotation, which is what we call the Spin Quantum Number.

Using all these four quantum numbers, we can now predict the exact location of the electron.

