STRUCTURE OF THE ATOM
Electron Distribution

❖ ELECTRONS DISTRIBUTION IN DIFFERENT ORBIT (SHELL)

The distribution of electron into different orbits of an atom was suggested by Bohr and Bury. The following rules are followed for writing the number of electrons in different energy level or shell. The maximum number of electrons present in a shell is given by the formula $2n^2$. Where 'n' is the orbit number or energy level index 1,2,3. Hence the maximum number of electrons in different shells are as follows.

First orbit (K-shell)

$$2 \times 1^2 = 2$$

Second orbit (L-shell) $= 2 \times 2^2 = 8$

Third orbit (M-shell) $= 2 \times 3^2 = 18$

Fourth orbit (N-shell) $= 2 \times 4^2 = 32$

The maximum number of electrons that can be accommodated in the outermost orbit is 8.

- Electron are not accommodated in a given shell. unless the inner shell are filled. That is, the shell are filled in a step-wise manner.

Orbitals : The three-dimensional area around the nucleus of an atom where the probability of finding the moving electrons is maximum is called orbital.