Quantum Number

In order to define an electron in space (at atom) four quantized number are required which are termed as quantum numbers.

(i) Principal quantum number
(ii) Azimuthal quantum number or, Subsidiary quantum number
(iii) Magnetic quantum number
(iv) Spin quantum number

(i) Principal Q. No. — It is represented by 'n'. It defined the shell no. of an electron present in at atom. n can have all the values from 1 to ∞ (any positive integers.)

K-shell $n=1$

L-shell $n=2$

M-shell $n=3$

N-shell $n=4$

and so on. - - -

It also represents the maximum no. of electrons in shell, which is $2n^2$.

Maximum no. of electrons in shell $= 2n^2$

K-shell $n=1$ $2\times(1)^2 = 2$ electrons

L-shell $n=2$ $2\times(2)^2 = 8$ electrons

M-shell $n=3$ $2\times(3)^2 = 18$ electrons

N-shell $n=4$ $2\times(4)^2 = 32$ electrons

and so on. - - -