

$$C_{SD} = 10$$

Heisenberg uncertainty principle

$$\rightarrow \Delta x \times \Delta p \geq \frac{h}{4\pi}$$

$$\rightarrow \Delta x \times \Delta v \geq \frac{h}{4\pi m}$$

$\rightarrow$ Where $\rightarrow \Delta x =$ uncertainty in position

$\Delta p =$ uncertainty in momentum

$\Delta v =$ uncertainty in velocity

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$$C_{sp} = 11$$

Schrodinger wave Equation

$\psi \rightarrow$ wave suppose kya hai

$$\psi = a \sin \omega t$$

solve Equation

Real value of ψ

Imaginary value of ψ
($\times \rightarrow$ not consider)

style hote hai

Real function

Real value of ψ

Radial function ($f(r)$)
(depend upon r (radius))

Angular wave function ($f(\theta, \phi)$)
(depend upon θ, ϕ angle)

solve them

$$\psi \neq 0$$

$$\psi = 0$$

$$\psi \neq 0$$

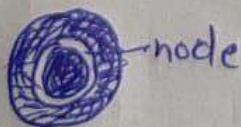
$$\psi = 0$$

Radial node
or
Spherical node

Angular node
or
planar node

* Within the orbital form hote hai

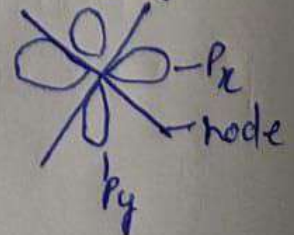
* No. of Radial node $= n - l - 1$



* Between the orbital milte hai

* No. of planar node

$$= l$$



$$\text{total node} = n - l - 1 + l = \underline{n - 1}$$

* principal, Azimuthal (l) and magnetic Quantum NO. (m)
(n) $\rightarrow$ solution of Schrodinger wave se milte hai