- **ROLL NO. - 210100166 CLASS – D3/T4**

- In weak-0, I learnt about uncertainty principle of Heisenberg which is $\Delta x\, \Delta p > h/4\pi$, planks equation $E = K.E. + \Phi$, by Davisson-Germier experiment gives $m\lambda = 2d\sin\theta$, De Broglie wavelength and Schrodinger's philosophy about particle and wave. We also got wave number $K = 2\pi/\lambda$. Finally, we get Schrodinger equation TDSE - $i\hbar\, \partial\psi/\partial t = H\psi = [-\hbar^2/2m\ \partial^2/\partial x^2 + V(x)]\ \psi$. I also understood about eigenfunction and eigen value of Schrodinger eqn. from lecture, All the eigenfunction of Q.M. operators are orthogonal ($<\psi_m / \psi n^*> = 0$ for $m \neq n$ and $(<\psi_m / \psi n^*> = 1$ for $m = n$).In this week I also learn about normalisation of function $(<\psi / \psi^*> = 1)$ and I also understand about what is the restrictions on wave functions, In free Particle there are no external force act on particle so net force on particle equal to zero so $v(X) = 0$ in Schrodinger equation.
- In particle in 1-D Box, there are two infinite wall at x=0 and x=L and we get boundary condition $\psi(0)=0$ and $\psi(L)=0$ and we get eqn. of wave function for particle in box is $\sqrt{2}/L \sin n\pi x/L$ where $n=1,2,3...$ and we get energy expression $E_n = nh^2/8mL^2$ then I learn about expectation value from lecture.