

Name of Lecturer:- Mrs. Abhilasha

Month:- July (Topics Covered)

Origin of Quantum Mechanics:->

- Failure of classical theory, Old Quantum theory.
- Photon, Photo Electric Effect.

Month:- August (Topics Covered)

- Compton effect, Inadequacy of old quantum theory.
- De-broglie Hypothesis, Davisson & Germer experiment.
- G.P. Thomson experiment, Phase velocity, group velocity.
- Heisenberg's Uncertainty Principle. Time-energy & angular mom.
- Uncertainty principle from de-broglie wave,
- Gamma-Ray microscope, Electron diffraction from a slit.
- Test

Month:- Sept.

Schrodinger wave Equation:->

- Derivation of time dependent Schrodinger wave equation
- Eigen values, Eigen functions, wave functions & its significance.
- Normalisation of wave function, concept of observable and operator.
- Sol. of Schrodinger equation for harmonic oscillator ground state and excited states.
- Test and group discussion.

Month:- October

- Application of S.W.E. of 1-D problems:-

a) Free particle in 1-D box.

→ Sol. of S.W.E.

→ Eigen function

→ Eigen values, quantization of energy & momentum.

→ Nodes & Antinodes, Zero point energy.

- Test

Month:- November:-

- One-Dim. Potential barrier $E > V_0$. (Reflection & Transm. coefficient)
- Penetration of leakage coefficient, Penetration depth.