SUBJECT NO-PH41011, SUBJECT NAME- Quantum Mechanics I

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Review of one dimensional potential problems in quantum mechanics; two and three dimensional problems: particle in a box, isotropic oscillator. Angular momentum, rigid rotator, Hydrogen atom. Stern-Gerlach experiment and spin, spin-half particle in a magnetic field, Dirac bra-kets, Hilbert space of state vectors; unitary transformations, Schrodinger and Heisenberg pictures. Addition of angular momenta , CG coefficients. Approximation methods: time independent perturbation theory (non-degenerate and degenerate cases), Zeeman and Stark effects, variational method, WKB approximation. Introduction to path integrals in quantum mechanics