COURSE OUTCOME of Physics Honours

Paper- IX

Special Theory of Relativity, Solid State of Physics, Statistical Mechanics

CO-9-1: Derive Lorentz transformation equations by using special Theory of Relativity.

CO-9-2: Define Four Dimensional Space and deduce the transformation formulae between **E** and **B**,**J** and ρ.

CO-9-3: Explain Gibb's paradox and derive Sackur Tetrode formula.

CO-9-4: Define Black Body and establish spectral distribution of energy of Black Body radiation.

CO-9-5: Describe different types of Crystal Structure and different type interatomic Binding in solids.

CO-9-6: Obtain an expression of Electrical and thermal conductivity in free electron model.

CO-9-7: Define different types of magnetic materials by using the concept of Classical and Quantum theory.

CO-9-8: Compare the concept of MB, BE, and FD statistics and use it to explain the specific heat and entropy of solids, liquids and gasses.

CO-9-9: Describe Brownian Motion by Langevin and Einstein theories.

Paper- X

Atomic Physics, Quantum Mechanics, Nuclear Physics

CO-10-1: Explain the characteristics of Photoelectric and Compton effects.

CO-10-2: Give the origin of Hydrogen spectra from Bohr's theory.

CO-10-3:Obtain the energy values of systems executing Linear Harmonic Oscillator

CO-10-4: Explain the characteristics of X ray Spectra and derive Mosley's law.

CO-10-5: State de Broglie postulates and explain wave like properties of particles.

CO-10-6: Explain the origin radioactivity and magic number from Liquid drop model and Shell Model

CO-10-7: Explain the phenomenon of Radioactive Decay (α,β and γ)

CO-10-8: StatePauli exclusion principle and describe LS and JJ coupling scheme.

CO-10-9: ExplainNuclear Fission and Fusion process in Nuclear reaction.

CO-10-10: Explain Zeeman effect, Paschen Back effect and Raman effect in atomic spectra.

Paper –XI

Electronics

CO-11-1: Explain Thermionic emission and characteristics of vacuum tubes.

CO-11-2: Explain the I-V characteristics of Zener diode, Tunnel diode and PN diode.

CO-11-3: Construct Rectifiers and Filters using diodes.

CO-11-4: Find gain of BJT Amplifiers &frequency of operation of Oscillators.

CO-11-5: Explain communication techniques using Modulation & de modulation.

CO-11-6: Calculate gain of Operational Amplifiers and describe its use.

CO-11-7: Introduce basic gates and construct Flip- Flops.