SUBJECT NO-PH41023, SUBJECT NAME- Staistical Physics-I

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Basic concepts , ensemble-microcanonical ensemble and thermodynamic connection, two state system and Einstein model of vibrating lattice, canonical ensemble, density matrix, partition function, thermodynamic function and equilibrium, ideal gas-translational, vibrational and rotational motion, para- , ortho-hydrogen, equipartition of energy, negative temperature, grand canonical ensemble : ideal , Fermi and Bose gas (both weakly and strongly degenerate), statistics of photon and phonon gas , imperfect gases, Virial expansion and Van der Waal s equations of state, approximate method for free energy, phase transition in model systems, transport equation, Langevin , Fokker-Planck equation , linear response and correlation functions.