Heat of thermodynamics

1. Fundamentals of thermodynamics:-

System , real system , Ideal system , system boundaries surrounding , Environment of external medium , open system ,Absolute system , Isolated system , Adiabatic wall , Diathermia wall , universe , thermal equilibrium , thermo dynamical equilibrium , system properties , Intensive of extensive properties , Independent properties , dependent properties , system state , thermodynamic process adiabatic process , irreversible , periodic of Isothermal processes , reversible process energies , Heat and work , internal energy

2. Useful mathematical theories:-

Partial derivatives , properties of fields system , conditions of state function , work done through different processes.

3. Equation of state:-

General equation of gases , Ideal gas equation , Experimental method to derive Ideal gas equation real gases , state equation of real gases . Ewans equation . Van der vah equation . pressure correction for van der valse . volume correction , Petti prejman equation , Clasius claporon equation , critical constants of Van der valse . critical coefficient .

4. First law of thermodynamics:-

Jaul's experiments , first law , Applications of first law , results of the first law Enthalpy , the meaning of Enthalpy , Free expansion of gas , the work done by gas through free expansion , the relation between internal energy and Enthalpy heat capacities CP&CV and the difference between them . reversible adiabatic process(Ideal gases) , slope of adiabatic and isothermal curries . work done through isothermal process , wok done through adiabatic process ratios of CP/CV prediction of (6)value by different methods .

5. Second law of thermodynamic:-

Heat engine of refrigerators , second law of thermodynamic , thermodynamic scale of Absolute temperature of Kelven scale , Carnot cycle , Absolute zero .

6.Entropy:-

Clasius clapron equality , calculation of change in Entropy , change of intropy through irreversible process , principles of increasing of entropy , change of intropy in Ideal gas curre of temperature- entropy , function of Gibbs & Helmoholtes , Maxwell reltion , Clasius clapron equalities , Jaul effect .