- [x] Reversible and Irreversible cells
- [x] Calomel Electrode & *Hydrogen electrode*
- [x] Calculation of equilibrium Constt. & EMF
- [ ] Electrolyte conc. cell without transference
- [ ] Calculation of ΔG, ΔH & K_a of cell rex^n
- [ ] Potentiometric titrations (HCl V/S NaOH)
- [ ] pH Solution can be determined by
  (i) Quinhydrone electrode (ii) Glass electrode
- [ ] Electrochemical series and its applications
- [x] Nernest eq^n of cell
- [ ] Concentration cell and their classification
- [ ] Activity, activity coeff & standard state
- [ ] Metal - metal ion electrode
- [x] Electrochemical cell V/s electrolytic cell
- [ ] Buffer sol^n → Acidic buffer & basic buffer
- [ ] Galvanic Cell
- [ ] Solubility and solubility product of sparingly soluble salts from EMF measurement

- [ ] Net entropy change for system & surrounding is zero for Reversible
- [ ] Absolute energy of substance
- [ ] Entropy and it is a state fux^n
- [x] Carnot heat engine cycle
- [x] limitation of Ist law of thermo overcome by IInd law
- [x] 3rd law of thermodynamics
- [x] Entropy change Calculation
- [ ] Free energy and its significance
- [x] Free energy change calculation
- [x] Entropy change on mixing ideal gases
- [x] Gibbs helmholtz eq^n & its importance
- [x] Residual entropy and its Origin and calculation

- ☐ Relationship $\Delta S = R \ln \frac{P_1}{P_2}$
- ☑ Liquid junction potential (Junction)
- ☐ Nernst heat theorem
- ☐ $\Delta S_{mixing} = -R \sum x_i \ln x_i$
- ☑ $\left[\frac{\partial(\Delta G)/T)}{\partial T}\right]_P = -\frac{\Delta H}{T}$
- ☐ IInd law of thermodynamics
- ☐ Entropy change (i) Isobaric ideal gas expansion
  (ii) Isothermal ideal gas expansion
- ☐ Helmholtz function V/s Gibbs function (when $\Delta G = \Delta A$?)