**Lesson Plan**

**Name of the Assistant Professor: Ms. Seema Rani**

**Class and Section:** B. Sc. I (N.M. & Medical) Second Semester

**Subject:** Chemistry lesson Plan: Even Semester 2023-24

|  |  |
| --- | --- |
| February,2024 | Rate of reaction, rate equation and its types, factors influencing the rate of a reaction – concentration, temperature, pressure, solvent, light, catalyst |
|  factors influencing the rate of a reaction – concentration, temperature, pressure, solvent, light, catalyst, Order of a reaction, integrated rate expression for zero order, first order, half order |
| Order of a reaction, integrated rate expression for zero and First order reactions, Half life period of a reaction |
| March,2024 | Nernst distribution law – its thermodynamic derivation |
| Nernst distribution law after association and dissociation of solute in one of the phases |
| April,2024 |  Determination of degree of hydrolysis and hydrolysis constant of aniline hydrochloride |
| April,2024 | Revision & Tests |

**Lesson Plan**

**Name of the Assistant Professor: Ms. Seema Rani**

**Class and Section:** B. Sc. II (N.M. & Medical) 4th Semester

**Subject:** Chemistry lesson Plan: Even Semester 2023-24

|  |  |
| --- | --- |
| January ,2024 | Second law of thermodynamics, Carnot’s cycle s and its efficiency, Carnot’ s theorm, Thermodynamics scale of temperature |
| Concept of entropy– entropy as a state function, Entropy as a function of V & T, entropy as a function of P & T, entropy change in physical change. |
|  | Entropy as a criteria of spontaneity and equilibrium, Third law of thermodynamics |
| Nernst heat theorem, statement of concept of residual entropy Evaluation of absolute entropy from heat capacity data,  |
| February ,2024 | Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities |
|  G as criteria for thermodynamic equilibrium and spontaneity, Variation of G with P, V and T. |
| Electrolytic and Galvanic cells, reversible & irreversible cells, conventional representation of electrochemical cells |
| Calculation of thermodynamic quantit ies of cell reaction (▲G, ▲H & K). Types of reversible electrodes – metal- metal ion, gas electrode, metal –insoluble salt- anion and redox electrodes |
| March,2024 | derivation of cell EMF and single electrode potential, Standard Hydrogen electrode, reference electrodes, standard electrode potential, sign conventions |
| Concentration cells with and without transference, liquid junction potential and its measurement |
| Applications of EMF measurement in solubility product, potentiometric titrations using glass electrode. More stress on numerical problems |
| April,2024 | Revision & Tests |

**Lesson Plan**

**Name of the Assistant Professor: Ms. Seema Rani**

**Class and Section:** B. Sc. III (N.M. & Medical) 6th Semester

**Subject:** Chemistry lesson Plan: Even Semester 2023-24

|  |  |
| --- | --- |
| January,2024 | Need for statistical thermodynamics, thermodynamic probability, Maxwell- Boltzmann distribution |
| Born–oppenheimer approximation, partition function and its significance, factorization of partition function |
|  | Interation of radiation with matter, thermal and photophysical process, laws of photochemistry |
| February,2024 | Jablonski diagram, quantum Yield, photosensitized reactions |
| Ideal and non-ideal solutions, Raoults law |
| Colligative properties |
| Applications in calculating molar mass of normal, dissociated and associated solutes in solution |
| March,2024 | Phase, component and Degree of freedom, Derivation of Gibbs Phase Rule, One component system Water |
| Two component system, desilverisation of lead |
| April,2024 | Revision & Tests |