

Lesson Plan for session:-2023-24

B.Sc.4th sem Physical Chemistry Name of Teacher:-Manu Kumar

Week	Topic
1	Thermodynamics III: Second law of thermodynamics
2	Carnot Cycle and its efficiency, Carnot theorem
3	Thermodynamic scale of temperature
4	Concept of Entropy
5	Thermodynamics IV: Third law of thermodynamics
6	Nerst heat theorem
7	Residual entropy, Gibbs Helmholtz function
8	Variation of A with P, V and T
9	Electrochemistry- III: Electrolytic and galvanic cells
10	Reversible and irreversible cells
11	EMF of cell and its measurement, activity and activity coefficients
12	Types of reversible electrodes
13	Reference electrodes, electrochemical series and its applications
14	Electrochemistry- IV: concentration cells with and without transference
15	Liquid junction potential, application of EMF measurement
16	Determination of pH using Hydrogen electrode, Quinhydrone electrode and glass electrode by potentiometric methods
17	Revision
18	Revision

Lesson Plan for session:-2023-24

B.Sc.6th sem Physical Chemistry Name of Teacher:- Manu Kumar

Week	Topic
1	Spectroscopy-III: Electronic spectrum, concept of potential energy curves for BMO and ABMO
2	Frank-codon Principle
3	Qualitative description of sigma and pie and n MO
4	Photochemistry: Intreaction of radiation with matter, thermal and photochemical processes
5	Laws of photochemistry
6	Jablonski diagram
7	Quantum yield and photosensitized reactions
8	Solutions: Dilute solutions and Colligative properties- Ideal and Non-ideal solutions
9	Methods of expressing concentrations of solutions
10	Colligative properties, Raolut's law
11	Relative lowering of vapour pressure, molecular weight determination
12	Osmosis , OP and its measurement
13	Elevtion in boiling point and depression in freezing point
14	Abnormal molar mass , degree of dissociation and association
15	Phase equilibrium: Statement and related terms, phase component and degree of freedom
16	Gibbs Phase Rule
17	Phase equilibria of one component system- water and sulphur system
18	Pb-Ag system, desilverisation of lead
19	Revision

Lesson Plan for session:-2023-24

B.Sc.6th sem Inorganic Chemistry Name of Teacher:- Manu Kumar

Week	Topic
1	Organometallic chemistry: Nomenclature and classification of OMC
2	Preparation , properties and bonding of alkyl of Li and Al
3	Preparation , properties and bonding of alkyl of Hg and Sn
4	Metal-ethylenic complexes
5	MonoNuclear carbonyls and the nature of bonding in metal carbonyls
6	Acids and Bases, HSAB concept: Arrhenius, Bronsted-Lowry, Lux-Flood concept
7	Solvent system and Lewis concept of acids and bases
8	Concept of Hard and Soft acids and bases
9	Symbiosis, Electronegativity and hardness and softness
10	Bioinorganic Chemistry: Essential and Trace elements in biological processes
11	Metalloporphyrins(Haemoglobin and myoglobin)
12	Biological role of alkali and alkaline earth metal ions with special reference to Ca ²⁺
13	Nitrogen fixation
14	Silicones
15	Phosphazenes
16	Revision
17	Revision

