

SARDAR PATEL UNIVERSITY**Programme: B.Sc (Chemistry)****Semester:****Syllabus with effect from:**

Paper Code: US06CCHE06	Total Credit: 3
Title Of Paper: Physical Chemistry	

Unit	Description in detail	Weighting (%)
I	Chemical Kinetics Mechanism of Complex reaction, The equilibrium approximation, Steady state approximation, Collision and Encounters, Effect of temperature on reaction rate, Effect of Catalyst, The Arrhenius Equation, The theories of reaction rate, The Lindemann theory of unimolecular reaction, Kinetics of Complex reaction, Opposing or reversible reaction, Consecutive reactions, Chain reaction and Branch Chain reaction, Activated Complex Theory (ACT) of Bimolecular reaction Basic Text & Reference Books :- ➤ Principles of Physical Chemistry 44 th Edition By Puri ,Sharma, Pathania	
II	Energy Of Collection Of Molecules Thermal Energy, Distribution over states, Boltzmann Distribution, Derivation of Boltzmann Distribution, Partition Function, One dimensional Translational media, Three dimensional Translational media, Rotational Motions, Vibrational Motions, Gas-Heat capacities, Crystal and Liquid Heat capacities, Heat capacity of metals, Numerical Basic Text & Reference Books :- ➤ Physical chemistry (5 th edition) by G.M.Barrow	
III	High Performance Chromatography (Hplc) Introduction, Principle and Apparatus of HPLC(Solvent delivery system , Pumps , Sample Injection System, Columns, Column Packing materials, Column packing), Choice of supporting materials for separation, Detectors, Characteristics of Detectors, Some Detectors used in HPLC, Method, Identification of Solvent peaks, Materials, Advantages of HPLC. Basic Text & Reference Books :- ➤ Instrumental methods of Chemical Analysis by B.K.Sharma	
IV	Solvent Extration Methods The Distribution Law, Extraction process, Liquid liquid extraction, Factor affecting Extraction, Technique for Solvent Extraction, Quantitative treatment of solvent Extraction equilibria, Classification of Solvent Extraction system, Types of extraction system, Advantage of Solvent Extraction system, Application of Liquid extraction, Solvent extraction methods in Metallurgy, Solid-Liquid Extraction. Basic Text & Reference Books :- ➤ Instrumental methods of Chemical Analysis by B.K.Sharma	

