

SARDAR PATEL UNIVERSITY
Programme: B.Sc
Semester: II
Syllabus with effect from: November-2011

Paper Code: US02CCHE02	Total Credit: 2
Title of Paper: Physical Chemistry	

Unit	Description in detail	Weightage (%)
I	Gaseous State Kinetic Molecular Theory of Gases, Deviation of Real Gases from Ideal Behaviour, Effect of Temperature and Explanation for the Deviations, Van der waal.s Equation of State, Discussion of Van der Wall.s Equation, Boyle Temperature, Critical Constant of Gas, Determination of Critical Temperature, Pressure and Volume, Van der waal.s Equation and the Critical States, Numerical Problems.	25%
II	The Liquid State Vapour Pressure, Isoteniscopic method, Surface Tension and Surface Analysis, Effects of Temperature on Surface Tnesion, Capillary rise method an Double Capillary rise Method, Viscosity, The Ostwald.s Viscometer Method, Effects of Temperature on Viscosity, Reynolds Number, Refractive Index and its Measurements	25%
III	Chemical Thermodynamics Terminology of Thermodynamics, Work and Heat, Internal Energy and First Law of Thermodynamics, Measurements of ΔE and ΔH , Hess.s Law and its Applications, Heat Capacity and Temperature Dependence of ΔH , Numerical Problems.	25%
IV	Chemical Kinetics Differential Rate Laws, Integrated Rate Laws, Experimental Determination of Rate Laws, Reaction Mechanism and Elementary Process, Mechanism and Rate Laws, Reaction Rates and Equilibria, Temperature Effects, Numerical Problems.	25%

Basic Text & Reference Books:

- University Chemistry By Bruce H Mahan 4th Edition, Narosa Publishing House.
- Principles of Physical Chemistry, Puri, Sharma and Pathania, 29th Edition S. Chand and Company.
- Physical Chemistry By G. M. Barrow
- Essential of Physical Chemistry by Bahl, Bahl and Tuli, 25th Edition, S. Chand and Company.

