

SARDAR PATEL UNIVERSITY
Programme: B.Sc (Chemistry)
Semester: V
Syllabus with effect from: June-2013

Paper Code: US05CCHE05	Total Credit: 3
Title Of Paper: Physical Chemistry	

Unit	Description in detail	Weighting (%)
I	<p>Photochemistry Introduction, Types of chemical reactions, Difference between Dark and Photochemical reaction, Absorption of light, Laws of photochemistry, Quantum yield (or) Quantum efficiency, Deviation in the law of photochemical, Equivalence, Reasons of high and low quantum yield, Factors affecting quantum yield, Luminescence, Fluorescence and Phosphorescence, Numericals.</p> <p>Basic Text & Reference Books :- ➤ Advanced Physical Chemistry by Gurdeep Raj.</p>	
II	<p>X-Ray Diffraction Crystal shapes and point groups, Lattice and Unit cells, Miller Indices, X-ray diffraction, Diffraction by crystal, Single Crystal Diffraction, Powder Crystal Method, X-ray diffraction and Unit cells, Dimensions and the contents of the unit cell, Ionic radii, Covalent radii, Van der Waal's radii, Lattice energies in ionic crystals, Numericals.</p> <p>Basic Text & Reference Books :- ➤ Physical Chemistry by G.M.Barrow. ➤ Solid state chemistry and its application by Anthony R.West.</p>	
III	<p>Macromolecules-I Introduction, Classification of polymers, Nomenclature of polymers, Isomerism of polymers, Chain growth polymerization – Introduction, Mechanism of free-radical, Cationic and Anionic polymerization, Kinetics of free radical, Cationic and Anionic polymerization, Mechanism and Kinetics polycondensation, Numericals.</p>	
IV	<p>Macromolecules-II Polymerization Techniques, Concept of Averages-Number average molecular weight, Weight average molecular weight, Viscosity average molecular weight, Molecular weight and Degree of polymerization, Poly dispersity and molecular weight distribution, Methods for determination of molecular weight, Membrane Osmometry, Vapour Phase Osmometry, Viscometry, Light Scattering, Numericals.</p> <p>Basic Text & Reference Books :- ➤ Principles of polymers Science by P.Bahadur and N.V.Sastry. (Second Edition) ➤ Polymer Science by V.R.Gowariker, N.V.Vashwanathan and Jaydev Shreedhar.</p>	

