

SARDAR PATEL UNIVERSITY
Programme: B.Sc
Semester: I
Syllabus with effect from: June-2011

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| Paper Code: US01CCHE01 | Total Credit: 2 |
| Title of Paper: General Chemistry | |

| Unit | Description in Detail | Weightage (%) |
|------|---|---------------|
| I | Analytical Chemistry Introduction, Applications, Stages of analysis, Selecting the methods, Quantitative analysis, Limitations of analytical methods, classification of errors, accuracy, precision, how to reduce systematic errors, significant figures, mean and standard deviation, distribution of random errors, reliability of results. | 25% |
| II | Ionic Equilibria in Aqueous Solution Sparingly soluble salts, Common ion effect, Selective precipitation, Arrhenius theory of Acids and Bases, The Lowry - Bronsted Concept, Strength of Acids and Bases, The Lewis concept, The pH Scale, Self Ionization of Water. | 25% |
| III | Alkanes, Alkenes & Alkynes Introduction of Hydrocarbons, Physical properties of alkanes, Higher alkanes- The homologous series, Nomenclature, Alkyl groups, Common names of alkanes, IUPAC names of alkanes, Classes of carbon atom and H-atoms, Physical properties, Geometric Isomerism, Name of alkenes, Nomenclature. Qualitative & quantitative analysis of organic compounds. Molecular formula: its fundamental importance, Quantitative elemental analysis, Quantitative elemental analysis: Carbon, Hydrogen and Halogen (Carius Method), Empirical Formula, Molecular weight: molecular formula, Quantitative elemental analysis (Kjeldahl & Dumas methods) | 25% |
| IV | Basic Concepts of Coordination Chemistry Definition of Some Terms, Classification of Ligands, Chelation, Classification of Chelates, Uses of Chelates, Co-ordination Number and Stereochemistry of Complexes, Nomenclature of Co-ordination Compounds. | 25% |

Basic Text & Reference Books:

- Vogel's textbook of quantitative chemical analysis, 6th Edition, J Mendham, R C Denney, J D Barnes, M J K Thomas (UNIT - 1)
- University Chemistry By Bruce H Mahan 4th edition, Narosa Publishing House. (UNIT - 2)
- Organic Chemistry by Morrison & Boyd 6th Edition. (UNIT - 3)
- Selected Topics in Inorganic Chemistry, Wahid U. Malik, G. D. Tuli, R. D. Madan. (UNIT - 4)

