

V.V.SANGHA'S
Smt. A.S.M. COLLEGE FOR WOMEN, BALLARI
DEPARTMENT OF CHEMISTRY
TEACHING PLAN

Academic year: 2023-2024

Semester: Second

Course: B.Sc.

Name of the Faculty: Dr. BINDU P J

Unit No	Title of the Chapter& Description	Period/Month	No of hours allotted	Hours taken /Conducted	Teaching pdagogy/ methodology used
Unit I	Bohr's theory, its limitations and atomic spectrum of hydrogen atom. Wave mechanics: de Broglie equation, Heisenberg's Uncertainty Principle and its significance, Schrödinger's wave equation, significance of ψ and ψ^2 .	13/05/2024 To 10/06/2024	04		BlackBoard & Chalk
	Quantum numbers and their significance. Normalized and orthogonal wave functions. Sign of wave functions. Radial and angular wave functions for hydrogen atom. Radial and angular distribution curves. Shapes of s, p, d and f orbitals. Contour boundary and probability diagrams. Pauli's Exclusion Principle, Hund's rule of maximum multiplicity. Aufbau's principle and its limitations- Electronic configurations of the elements (Z=1-30), effective nuclear charge, shielding/screening effect, Slater's rules. Variation of effective nuclear charge in Periodic Table. Liquid State Surface Tension: Definition and its determination using stalagmometer, effect of temperature and solute on surface tension Viscosity: Definition, Coefficient of viscosity. Determination of viscosity of a liquid using Oswald viscometer. Effect of temperature, size, weight, shape of molecules and intermolecular forces. Refraction: Specific and molar refraction- definition and advantages. Determination of refractive index by Abbes Refractometer. Additive and constitutive properties. Parachor: Definition, Atomic and structure parachor, Elucidation of structure of benzene and benzoquinone. Viscosity and molecular structure. Molar refraction and chemical constitution. Numerical Problems.	11/06/2024 To 02/08/2024	17		BlackBoard & Chalk

FACULTY


Signature of the Faculty

HOD


Signature of the HOD
Head of the
Department of Chemistry
Smt ASM Degree College for Women
BELLARY

PRINCIPAL


Signature of the Principal
Principal
Smt. Allum Sumangamma Memorial
College for Women, Ballari-583103

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Smt. A.S.M. COLLEGE FOR WOMEN, BALLARI
DEPARTMENT OF CHEMISTRY
TEACHING PLAN

Academic year: 2022-2023

Semester: SIXTH (6.1)

Course: B.Sc.

Name of the Faculty: Dr. BINDU P J

Unit No	Title of the Chapter& Description	Period/Month	No of hours allotted	Hours taken /Conducted	Teaching pdagogy/ methodology used
Unit III	IONIC EQUILIBRIA: Ionic equilibria in aqueous solutions, strong and weak electrolytes- definition and examples. Ostwald's dilution law and its limitations. Debye Huckel theory of strong electrolytes. Activity and activity coefficient- definition and their relation. Hydrolysis of salts- Derivation of hydrolysis constant and degree of hydrolysis of the salt of weak acid and weak base, effect of temperature on degree of hydrolysis. Numerical problems.	13/05/2024 To 07/06/2024	05		BlackBoard & Chalk
	ELECTROCHEMISTRY-II: Electrolytic and Electrochemical cells- Daniel cell. Reversible and irreversible cells, rules for representation of a cell, single electrode potential, standard electrode potential, sign convention for electrode potential, Nernst equation for single electrode potential. Reference electrode: Calomel electrode, Ag-AgCl electrode. Weston standard cell, equilibrium constant and free energy of a cell reaction, concentration cell, Liquid junction potential. Salt bridge. Application of concentration cell: Valency of ions and solubility product of sparingly soluble salt. Applications of EMF measurements in (a) Determination of P^H of a solution using- (i) quinhydrone electrode, (ii) glass electrode, (b) Potentiometric titration- principle and location of end point in (i) Oxidation-reduction reaction, (ii) Precipitation reaction, (iii) acid-base reaction.	08/06/2024 To 15/06/2024	10		BlackBoard & Chalk
Unit IV	Elimination Reactions: Effects of substrate structure, attacking base, the leaving group and the medium on elimination reactions. Chugaev reaction. 08 Hrs.	16/07/2024 To 02/08/2024	04		BlackBoard & Chalk

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