

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

Academic year: 2023-2024

Semester: Third

Course: B.Sc. (NEP)

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	Quantitataive analysis-Instrumental methods Electromagnetic spectrum, absorption of electromagnetic radiation, Definition and units of frequency, wavelength, wave number, Beer's law, Beer-Lambert law derivation, deviations from Beer's law, limitations, construction of calibration graph (Plot of absorbance versus concentration), Evaluation Procedures-standard addition, Internal standard addition, validation parameters-detection limits, sensitivity, dynamic/linearity range, Instrumentation, single beam and double beam spectrophotometers, quantitative applications of colorimetry (determination of Fe, Mo, Cu, Ti and PO ₄ 3-) and numerical problems on application of Beer's law.	24/12/2023 To 28./12/2023	09	07	BlackBoard & Chalk
	Nephelometry and Turbidimetry: Introduction, principle, instrumentations of nephelometry and turbidimetry; effects of concentration, particle size and wavelength on scattering; choice between nephelometry, applications of nephelometry and turbidimetry (determination of SO ₄ ²⁻ and PO ₄ ³⁻)	29/12/2023 To 15/01/2024	05	04	BlackBoard & Chalk
Unit III	Thin layer chromatography (TLC): Mechanism, R _f value, efficiency of TLC plates, methodology-selection of stationary and mobile phases, development, spray reagents, Identification and detection, qualitative applications. Solvent Extraction: Types- batch, continous, efficiency, selectivity, distribution coefficient, Nernst distribution law, derivation, factors affecting the partition, relationship between % extraction and volume fraction, Numerical problems on solvent Extraction. Solvent extraction of iron and copper.	16/01/2024 To 29/02/2024	08	07	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 Sumangalamma Memorial
College for Women, Ballari-583103

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

Academic year: 2023-2024

Semester: Fifth (5.1)

Course: B.Sc. (NEP)

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 & Unit II	<u>PHYSICAL CHEMISTRY</u> PHOTOCHEMISTRY: Laws of photochemistry Grothus – law draper law, Stark-Eienstien law QUANTUM EFFICIENCY: Definition, reasons for low quantum yield and high quntum yield with examples. ACTINOMETERS:Uranyl oxalate Actinometer, Potassiumferrioxalate Actinometer. Photophysical process Joblanski diagram, Photosensitization with example, photoinhibition, fluorescence and Phosphorescence, Chemiluniscence and Bioluminiscence, Mechanism. RADIOATIONCHEMISTRY:Definition, primary and secondary stages in radio chemical reaction, ionic yield, energy yield comparisoin with photochemistry, units of radiation –rad, gray Roentgen.Dosimeters –frick-dosimeter, cerric-sulphate dosimeter.	24/11/2023 To 24/12/2023	04	03	BlackBoard & Chalk
	THEORIES OF RADIOLYSIS–Lind’s and EHT theories, radiolysis of water and acetic acid.PHASE EQUILIBRIA: Definition of the terms –Phase ,component and degree of freedom with examples, Statement of Gibb’s phase rule and Thermodynamic derivation, applications, one component system, reduced phase rule and reduced system, two component system, desilverization system of Pb-FeCl₃-H₂O system. FREEZING MIXTURES:Definition and examples explanation based on KI- H₂O system.	25/12/2023 To 10/01/2024	10	09	BlackBoard & Chalk
	STREOCHEMISTRY –Chirality in Allenes, Alkylidene, Cyclo alkanes and Spiranes, Cram’s rule and Prelog’s rule, Confirmation analysis of substituted cycloalkanes.and cyclopentane. Nomenclature and confirmations of fused rings and bridge ring system, prochirality Enantiotropic and dia stereotropic atoms groups and faces.	08/02/2024 TO 29/02/2024	06	05	BlackBoard & Chalk

FACULTY

HOD

PRINCIPAL


Signature of the Faculty


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


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