

Govt. P.G. College Berinag, Pithoragarh

Chemistry Department

Course Outcome

M. Sc. Ist SEM PAPER: Inorganic Chemistry-1

After Completing the Paper Students are able to understand:

- CO1 Essence of hybridization.
- CO2 Characteristic of hybrid orbitals.
- CO3 Use of VSEPR theory in explaining the shape of molecules.
- CO4 Characteristic of borides,carbonyls,carbides,nitrides.
- CO5 Metal ligand equilibrium.

M. Sc. Ist SEM PAPER: Organic Chemistry-1

After Completing the Paper Students are able to understand:

- CO1 Molecular symmetry and chirality
- CO2 Aromaticity in benzenoid and non- benzenoid compounds.
- CO3 Delocalised chemical bonding
- CO4 PMO approach
- CO5 Configuration,nomenclature,D,L,R,S and E, Z nomenclature.
- CO6 Stereochemistry of compounds containing N,S and P chirogenicity,
- CO7 Stereoselectivity, stereospecificity, regioselectivity and chemoselectivity, enantiomeric&diastereomeric excess.
- CO8 Classification of pericyclic reactions
- CO9 The S_N2,S_N1,mixed S_N2 and S_N1,S_N2 and SET mechanisms.
- CO10 The S_N Ar, S_N1benzyne and S_N1 mechanism.

M. Sc. Ist SEM PAPER: Physical Chemistry-1

After Completing the Paper Students are able to understand:

- CO1 Nerst theorem, spontaneity
- CO2 Partial molar properties
- CO3 Gibbs-Duhem equation
- CO4 Collision theory of reaction rates,
- CO5 Steric factor,
- CO6 Activated complex theory
- CO7 Ionic reactions
- CO8 Kinetic salt effects.

M. Sc. Ist SEM PAPER: Group Theory and Instrumentation Chemistry-1

After Completing the Paper Students are able to understand:

- CO1 Symmetry elements and symmetry operations.
- CO2 Conjugacy relation and classes of symmetry operations, point symmetry (or group) and its classification
- CO3 X-ray structural analysis of crystal
- CO4 Introduction of electron diffraction
- CO5 Application of TLC
- CO6 Column and HPLC
- CO7 Ion exchange chromatography: Cationic, anionic exchangers and their applications.

M. Sc. Ist SEM PAPER: Biology for Chemist (For Mathematics Students)-1

After Completing the Paper Students are able to understand:

- CO1 Cell size and shape
- CO2 Cell membrane and wall
- CO3 Chloroplast
- CO4 Nucleosides
- CO5 Cell respiration and metabolism

M. Sc. Ist SEM PAPER: Mathematics for Chemist (Only for biology students)-1

After Completing the Paper Students are able to understand:

- CO1 About mathematical function
- CO2 Graph and Variables
- CO3 Differential formulas and integration formulas
- CO4 Matrix and determinateness
- CO5 Concept of coordinates

M. Sc. IInd SEM PAPER: Inorganic Chemistry-2

After Completing the Paper Students are able to understand:

- CO1 Kinetic application of CFT and VBT
- CO2 Hydrolysis
- CO3 Mechanism of the substitution reaction.
- CO4 Mechanism of electron transfer reaction

CO5 Marcus-Hush theory
M. Sc. IInd SEM PAPER: Organic Chemistry-2
<p>After Completing the Paper Students are able to understand:</p> <p>CO1 Mechanism SE₂, SE₁ CO2 Diazonium Coupling. CO3 Effect of solvents on reactivity CO4 Types of pre radical reaction CO5 E₂, E₁ and E₁cB mechanism and their spectra. CO6 Grignard reagent CO7 Name reactions.</p>
M. Sc. IInd SEM PAPER: Spectroscopic Techniques-2
<p>After Completing the Paper Students are able to understand:</p> <p>CO1 Mode of vibrations and group frequencies in IR CO2 PQR branches CO3 Solvent effect on IR spectra CO4 Mossbaures spectra CO5 UV visible and Raman Spectra</p>
M. Sc. IInd SEM PAPER: Physical Chemistry-2
<p>After Completing the Paper Students are able to understand:</p> <p>CO1 Adsorption CO2 BET equation CO3 Debye-Huckel-Onsagar theory CO4 Operators CO5 Schrodinger's equation and its application.</p>
M. Sc. IIIrd SEM PAPER: Solid State Chemistry-3
<p>After Completing the Paper Students are able to understand:</p> <p>CO1 Structure of solid-band theory CO2 Types of conductor CO3 Crystal defects CO4 Electrically conducting solids CO5 Super conductors and fullerenes</p>
M. Sc. IIIrd SEM PAPER: Spectroscopy Techniques -3

After Completing the Paper Students are able to understand:

- CO1 Molecular dissymmetry
- CO2 Electronic transitions
- CO3 ORD and CD curves
- CO4 Characteristics vibration frequencies of compound

M. Sc. IIIrd SEM PAPER: Chemistry of Biological System-3

After Completing the Paper Students are able to understand:

- CO1 Essential trace metal in biological system
- CO2 Transport and storage of dioxygen
- CO3 Enzyme chemistry
- CO4 Bio energetics

M. Sc. IIIrd SEM PAPER: Inter disciplinary topics in chemistry-3

After Completing the Paper Students are able to understand:

- CO1 Chemistry in nano scale
- CO2 Chemistry involve in environment
- CO3 Green chemistry involve
- CO4 QSAR and SAR
- CO5 Basics of computer

M. Sc. IIIrd SEM PAPER: Photo Chemistry-3

After Completing the Paper Students are able to understand:

- CO1 Photochemical laws
- CO2 Quantum yield and its determination
- CO3 Photochemical additions
- CO4 Paterno-Buchi reactions
- CO5 Norrish type I & II reactions

M. Sc. IVth SEM PAPER: Organic Synthesis-4

After Completing the Paper Students are able to understand:

- CO1 Oxidation and reduction process.
- CO2 Organo metallic reagents and ring synthesis.
- CO3 C-C Disconnection one and two group.

CO4 Metallocenes

M. Sc. IVth SEM PAPER: Chemistry of Natural Products and Heterocyclic Compounds-4

After Completing the Paper Students are able to understand:

- CO1 Classification, nomenclature of Alkaloids, terpenoids and steroids
- CO2 Occurrence and general aspects of Pigments/ porphyrins and PGE2
- CO3 Heterocyclics three and four membered rings.
- CO4 Spectroscopic techniques for elucidation of natural products

M. Sc. IVth SEM PAPER: Medicinal Chemistry-4

After Completing the Paper Students are able to understand:

- CO1 Drug design
- CO2 Introduction to drug absorption
- CO3 Pharmaco Kinetic parameters
- CO4 Different types of drugs

