SETH GYANIRAM BANSIDHAR PODAR COLLEGE
RUN BY THE ANANDILAL PODAR TRUST, NAWALGARH
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AFFILIATED TO PANDIT DEENDAYAL UPADHYAYA SHEKHAWATI UNIVERSITY, SIKAR and recognized u/s 2(f) and 12(B) by UGC

Course Outcomes of All Courses of B.Sc. Chemistry

Course Code	Course Title	Course Outcome1	Course Outcome2	Course Outcome3	Course Outcome4	Course Outcome5
BSC I C1	Chemistry - I (Inorganic)	Identify different types of metals and their chemical properties.	Understand the Concept of ionic bonding and how it forms.	Explain different types of weak interactions (hydrogen bonding, van der Waals forces).	Use VSEPR theory to predict the shapes of molecules.	Understand the basics of nuclear chemistry (isotopes, radioactivity).
BSC I C2	Chemistry - II (Organic)	Explain mechanisms of organic reactions (bond cleavage, reagents, intermediates).	Identify and differentiate various types of isomerism.	Apply stereochemistry principles to chiral molecules (optical activity, diastereoisomers, resolution).	Analyze and interpret organic reaction mechanisms using various methods.	Understand fundamental Concepts of cycloalkanes, dienes, and alkynes.
BSC I C3	Chemistry - III (Physical)	Explain fundamental principles of X-ray diffraction by crystals (unit cell, Bragg's equation, Laue and powder methods).	Differentiate characteristics of solid, liquid, and gaseous states (intermolecular forces, structural differences, liquid crystals).	Apply mathematical Concepts to solve problems in physics and chemistry (logarithmic relations, curve sketching, differentiation, integration).	Explain different types of Colloids, their properties, and factors affecting stability (sols, gels, emulsions, Hardy-Schulze law, emulsifiers).	Analyze and understand the kinetics of chemical reactions (order of reactions, half-life, mean-life, factors affecting rates, experimental methods, activation energy).
BSC II C1	Chemistry - I (Inorganic)	D-block trends & properties (oxidation, magnetism, complex formation)	Predict structures & reactivities of 1st-row transition metal compounds	Compare properties of 2nd & 3rd row transition elements	Use inert pair effect to explain deviations in trends	Understand fundamental principles of coordination chemistry
BSC II C2	Chemistry - II (Organic)	Explain UV & IR regions for studying organic molecules	Classify & name alcohols & phenols, understand hydrogen bonding & reactions	Identify & differentiate aldehydes, ketones, ethers & epoxides, predict nucleophilic addition reactions	Explain structure, bonding & acidity of carboxylic acids, understand reactions & derivatives	Describe preparation & reactions of nitroalkanes & amines
BSC II C3	Chemistry - III (Physical)	Apply thermodynamics concepts to systems, states, processes, work & heat	Explain & apply 1st & 2nd laws of thermodynamics	Understand entropy & its relation to spontaneity & equilibrium	Apply thermodynamics to chemical & phase equilibria	Understand & apply electrochemical concepts to electrolyte solutions & cells
BSC III C1	Chemistry - I (Inorganic)	Differentiate hard/soft acids & bases (HSAB), explain acid-base strength & symbiosis in complexes.	Analyze theoretical basis of hardness/softness & predict stability/reactivity of acid-base interactions.	Identify limitations of valence bond theory & understand crystal-field theory for predicting splitting in different geometries.	Explain factors affecting crystal-field parameters & their influence on complex stability/properties.	Classify magnetic behavior in complexes, use methods for determining magnetic susceptibility & analyze magnetic moments.
BSC III C2	Chemistry - II (Organic)	Explain NMR principles & apply them to understand simple organic molecule structures.	Utilize enolates for various reactions, understand α-hydrogen acidity & apply alkylation techniques.	Analyze aromaticity, synthesis, & reactions of important heterocyclic compounds.	Identify & comprehend synthesis/reactions of specific five & six-membered heterocycles.	Classify & analyze carbohydrates (nomenclature, epimers, anomers, mutarotation, etc.) & understand structures of common sugars & polysaccharides.
BSC III C3	Chemistry - III (Physical)	Explain quantum mechanics fundamentals using concepts like Planck's law, photoelectric effect, & Bohr model.	Analyze wave nature of particles using De Broglie's hypothesis & uncertainty principle.	Describe hydrogen atom structure using Schrödinger equation & identify quantum numbers.	Explain molecular orbital theory principles, including MO construction & bonding/antibonding orbitals.	Differentiate & understand applications of various types of spectroscopy (rotational, vibrational, electronic) for analyzing molecular structure.

BSc Chemistry Program Summary Sheet

S.NO.	Program Outcomes (POs):	Program Specific Outcomes (PSOs):	Program Educational Objectives (PEOs):
PO1/PSO1/PEO1	Fundamental chemical knowledge (atomic structure, bonding, thermodynamics, kinetics, spectroscopy, nuclear chemistry)	**Leverage chemical knowledge for innovation:** Graduates will apply their deep chemical understanding and practical skills to develop innovative solutions across diverse fields, including materials science, pharmaceuticals, environmental science, and energy technology.	**Recognized professionals:** Within three years of graduation, BSc Chemistry graduates will be recognized as well-equipped professionals in their chosen field, contributing meaningfully to scientific advancement and technological innovation through their work.
PO2/PSO2/PEO2	Organic chemistry skills (reaction mechanisms, isomerism, stereochemistry, aromatic chemistry)	**Translate science into practice:** Graduates will be proficient in translating scientific knowledge into tangible applications, working effectively in interdisciplinary teams, and communicating complex scientific concepts to various audiences, both technical and non-technical.	**Continuous learning:** Graduates will demonstrate a commitment to continuous learning and professional development, actively seeking opportunities to expand their knowledge and skills throughout their careers.
PO3/PSO3/PEO3	Physical chemistry understanding (thermodynamics, kinetics, electrochemistry, colloids, crystallography)	**Ethical and sustainable impact:** Graduates will demonstrate a strong commitment to applying their knowledge for the betterment of society, incorporating ethical considerations, environmental awareness, and sustainable practices into their work.	**Ethical and responsible conduct:** Graduates will uphold the highest ethical standards within the scientific community, promoting sustainable practices, safety awareness, and responsible conduct in their field.
PO4/PSO4/PEO4	Inorganic chemistry proficiency (transition metals, periodic trends, d-block elements, complex formation)	**Lifelong learning and adaptability:** Graduates will be equipped and motivated to continuously learn and adapt to evolving needs, actively seeking opportunities to expand their knowledge and skills throughout their careers.	**Societal impact:** Graduates will be committed to using their knowledge and skills to address real-world challenges and contribute to the betterment of society.

S.NO.	Program Outcomes (POs):	Program Specific Outcomes (PSOs):	Program Educational Objectives (PEOs):
PO5/PSO5/PEO5	Analytical skills and instrumental techniques (UV-IR, NMR, mass spectrometry)	**Professional conduct and responsibility:** Graduates will uphold the highest ethical standards within the scientific community, promoting safety awareness, responsible conduct, and integrity in their chosen field.	**Adaptability and resilience:** Graduates will be adaptable and resilient, able to navigate changes in the workforce and technology landscape with a positive and proactive approach.
PO6/PSO6/PEO6	Quantitative and mathematical skills (data analysis, problem solving, scientific interpretation)	**Leadership and teamwork:** Graduates will be able to effectively lead and collaborate within diverse teams, fostering a positive and inclusive work environment while achieving shared goals.	**Effective communication and collaboration:** Graduates will be able to communicate effectively and collaborate with diverse stakeholders, fostering a culture of inclusivity and shared understanding.
PO7/PSO7/PEO7	Communication and critical thinking skills (effective communication, diverse audiences)	**Global citizenship and cultural awareness:** Graduates will demonstrate an understanding of global challenges and cultural perspectives, contributing to solutions that benefit diverse communities and promote a sustainable future.	**Global perspective and leadership:** Graduates will possess a global perspective and demonstrate leadership qualities, contributing to solutions that address global challenges and promote positive change.

Mapping of Course Outcomes of Various Courses of B.Sc. Chemistry Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)

Course Outcome	PO	PSO	PEO	Level
BSC I INORGANIC CHEMISTRY				
Identify different types of metals and their chemical properties.	PO1	PSO1	PEO1	Remembering (Low)
Explain the concept of ionic bonding and how it forms.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
Use VSEPR theory to predict the shapes of molecules.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Applying (Medium)
Understand the basics of nuclear chemistry (isotopes, radioactivity).	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Analyzing (High)
Explain different types of weak interactions (hydrogen bonding, van der Waals forces).	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
BSC I ORGANIC CHEMISTRY				
Identify functional groups in organic molecules.	PO1	PSO1	PEO1	Remembering (Low)
Explain basic organic chemistry concepts (hybridization, bonding).	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
Use IUPAC nomenclature to name organic compounds.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Applying (Medium)
Interpret organic spectra (IR, NMR) to determine functional groups.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Analyzing (High)
Compare and contrast reaction mechanisms for the same transformation.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Evaluating (High)
Design a multi-step synthesis of a simple organic molecule.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Creating (High)
BSC I PHYSICAL CHEMISTRY				
Explain fundamental principles of physical chemistry	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
Apply mathematical concepts to solve problems in physical chemistry	PO1, PO3,PO6	PSO1, PSO2	PEO1, PEO2	Applying (High)
Explain different types of solids, liquids, and gases	PO1	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
Differentiate between different types of colloids	PO1	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
Analyze the kinetics of chemical reactions	PO1, PO2, PO3	PSO1, PSO2	PEO1, PEO2	Analyzing (High)

Mapping of Course Outcomes of Various Courses of B.Sc. Chemistry Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)

Course Outcome	PO	PSO	PEO	Level
BSC II INORGANIC CHEMISTRY				
Predict structures and reactivities of 1st-row transition metal compounds	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Analyzing (High)
Compare properties of 2nd and 3rd row transition elements	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Analyzing (High)
Use inert pair effect to explain deviations in trends	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Applying (High)
Understand fundamental principles of coordination chemistry	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
BSC II ORGANIC CHEMISTRY				
Explain UV & IR regions for studying organic molecules	PO1, PO2,PO5	PSO1, PSO2,PSO3	PEO1, PEO2	Understanding (Medium)
Classify & name alcohols & phenols, understand hydrogen bonding & reactions	PO1, PO2	PSO1, PSO2,PSO3	PEO1, PEO2	Understanding (Medium), Applying (Medium)
Identify & differentiate aldehydes, ketones, ethers & epoxides, predict nucleophilic addition reactions	PO1, PO2	PSO1, PSO2,PSO3	PEO1, PEO2	Understanding (Medium), Applying (High)
Explain structure, bonding & acidity of carboxylic acids, understand reactions & derivatives	PO1, PO2	PSO1, PSO2,PSO3	PEO1, PEO2	Understanding (Medium), Applying (Medium)
Describe preparation & reactions of nitroalkanes & amines	PO1, PO2	PSO1, PSO2,PSO3	PEO1, PEO2	Understanding (Medium), Applying (Medium)
BSC II PHYSICAL CHEMISTRY				
Explain & apply 1st & 2nd laws of thermodynamics	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium), Applying (High)
Apply thermodynamics concepts to systems, states, processes, work & heat	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Applying (High), Analyzing (High)
Understand entropy & its relation to spontaneity & equilibrium	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium), Analyzing (High)
Apply thermodynamics to chemical & phase equilibria	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Applying (High), Analyzing (High)
Understand & apply electrochemical concepts to electrolyte solutions & cells	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium), Applying (High)

Mapping of Course Outcomes of Various Courses of B.Sc. Chemistry Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)

Course Outcome	PO	PSO	PEO	Level
BSC III INORGANIC CHEMISTRY				
Differentiate hard/soft acids & bases (HSAB), explain acid-base strength & symbiosis in complexes	PO1, PO2,PO4	PSO1, PSO2	PEO1, PEO2	Understanding (Medium), Applying (Medium)
Analyze theoretical basis of hardness/softness & predict stability/reactivity of acid-base interactions	PO1, PO2, PO3,PO4	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyzing (High), Applying (High)
Identify limitations of valence bond theory & understand crystal-field theory for predicting splitting in different geometries	PO1, PO2,PO4	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
Explain factors affecting crystal-field parameters & their influence on complex stability/properties	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyzing (High), Applying (High)
Classify magnetic behavior in complexes, use methods for determining magnetic susceptibility & analyze magnetic moments	PO1, PO2, PO3,PO4	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Understanding (Medium), Applying (High), Analyzing (High)
BSC III ORGANIC CHEMISTRY				
Explain NMR principles & apply them to understand simple organic molecule structures	PO1, PO2,PO5	PSO1, PSO2	PEO1, PEO2	Understanding (Medium), Applying (High)
Utilize enolates for various reactions, understand α-hydrogen acidity & apply alkylation techniques	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Applying (High), Analyzing (High)
Analyze aromaticity, synthesis, & reactions of important heterocyclic compounds	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyzing (High)
Identify & comprehend synthesis/reactions of specific five & six- membered heterocycles	PO1, PO2	PSO1, PSO2,PSO4	PEO1, PEO2	Understanding (Medium), Applying (Medium)
Classify & analyze carbohydrates (nomenclature, epimers, anomers, mutarotation, etc.) & understand structures of common sugars & polysaccharides	PO1, PO2	PSO1, PSO2,PSO3	PEO1, PEO2	Understanding (Medium), Analyzing (Medium)
BSC III PHYSICAL CHEMISTRY				
Explain quantum mechanics fundamentals using concepts like Planck's law, photoelectric effect, & Bohr model	PO1, PO2	PSO1, PSO2,PSO5	PEO1, PEO2	Understanding (Medium)
Analyze wave nature of particles using De Broglie's hypothesis & uncertainty principle	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyzing (High)
Describe hydrogen atom structure using Schrödinger equation & identify quantum numbers	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Applying (High)
Explain molecular orbital theory principles, including MO construction & bonding/antibonding orbitals	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understanding (Medium)
Differentiate & understand applications of various types of spectroscopy (rotational, vibrational, electronic) for analyzing molecular structure	PO1, PO2, PO3,PO5	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyzing (High), Applying (High)

M.Sc. Chemistry Course Outcomes Summary Sheet

Course	Paper	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5	Course Outcome 6	Course Outcome 7
M.Sc.(Previous) Chemistry	**(Inorganic Chemistry)I**	Master the foundation of symmetry and group theory for analyzing molecular arrangements and spectroscopic data.	Comprehend VSEPR theory and Walsh diagrams for predicting shapes and stabilities of molecules involving main group elements.	Differentiate between crystal field theory and molecular orbital theory, and apply them to understand metal complex bonding in various geometries.	Interpret electronic spectra and magnetic properties of transition metal complexes using Orgel/Tanabe-Sugano diagrams and spectroscopic methods.	Explain reaction mechanisms of transition metal complexes, including substitution, redox, and electron transfer processes, for predicting reactivity and kinetics.	Utilize principles of nuclear and radiochemistry in understanding radioactive decay, radiation detection, and activation analysis for diverse applications.	Develop critical thinking and problem-solving skills for applying theoretical knowledge to analyze chemical phenomena and interpret experimental data in inorganic chemistry.
M.Sc.(Previous) Chemistry	**(Organic Chemistry)II**	Comprehend principles of delocalized chemical bonding, aromaticity, and their influence on the structure and reactivity of organic molecules.	Master concepts of stereochemistry, including conformational analysis, chirality, and diastereoisomerism, and apply them to predict molecular properties and reactivity.	Explain mechanisms of various organic reactions, including nucleophilic and electrophilic substitution, free radical reactions, and addition reactions, with focus on factors influencing rate and selectivity.	Differentiate and analyze aromatic electrophilic and nucleophilic substitutions, understanding the unique reactivity patterns based on the arenium ion mechanism and electronic effects.	Describe mechanisms of addition reactions to carbon-carbon and carbon-hetero multiple bonds, including hydrogenation, hydroboration, and enolate condensation reactions, focusing on stereochemical control and influencing factors.	Explain principles of elimination reactions (E2, E1, E1cB), pericyclic reactions (concerted, disrotatory, conrotatory, suprafacial, antarafacial), and sigmatropic rearrangements, utilizing frontier orbital theory and Woodward-Hoffmann rules.	Develop problem-solving skills to apply theoretical knowledge of organic reaction mechanisms and stereochemistry to predict product formation, selectivity, and reactivity in complex molecules.
M.Sc.(Previous) Chemistry	**(Physical Chemistry)III**	Master fundamental principles of quantum mechanics, including the Schrodinger equation, model systems, and angular momentum.	Apply approximation methods like variation theory and perturbation theory to analyze the electronic structure of atoms and molecules.	Utilize molecular orbital theory, particularly Huckel theory, to understand bonding, charge distribution, and reactivity in conjugated systems.	Explain concepts of classical thermodynamics, non-ideal systems, and phase transitions, and apply them to chemical equilibria and phase behavior.	Utilize statistical thermodynamics principles, including distribution functions, ensembles, and partition functions, to calculate thermodynamic properties of various systems.	Analyze chemical reaction dynamics using collision theory, activated complex theory, and various kinetic methods, interpreting factors influencing reaction rates and mechanisms.	Understand surface chemistry phenomena like adsorption, micelles, and macromolecules, applying relevant theories and methods for characterization and behavior prediction.
M.Sc.(Previous) Chemistry	**(Spectroscopy)IV**	Comprehend unifying principles of spectroscopy, including electromagnetic radiation interaction with matter, selection rules, and transition probabilities.	Analyze structure and dynamics of molecules using microwave spectroscopy, understanding effects of isotopic substitution and external fields.	Interpret vibrational transitions and spectra obtained through infrared and Raman spectroscopy, applying techniques like normal coordinate analysis and group frequencies.	Explain principles of atomic and molecular electronic spectroscopy, analyzing energy levels, vibronic transitions, and photoelectron spectra for structural elucidation.	Utilize nuclear magnetic resonance spectroscopy (NMR) to probe molecular structure and dynamics, interpreting chemical shifts, coupling constants, and relaxation phenomena.	Apply electron spin resonance spectroscopy (ESR) to understand the electronic structure and magnetic properties of molecules, focusing on hyperfine coupling and spin densities.	Master various diffraction techniques like X-ray, electron, and neutron diffraction for determining the crystalline and molecular structures of materials, including absolute configuration determination.
M.Sc.(Previous) Chemistry	**(Green Chemistry)V**	Master principles and concepts of Green Chemistry, including the twelve principles and their application in designing sustainable chemical processes.	Utilize non-traditional and greener alternative approaches in organic synthesis, such as green reagents, catalysts, and non-conventional energy sources.	. Explain the advantages and applications of microwave-assisted synthesis, particularly for specific organic transformations and heterocyclic ring formation.	Analyze the principles and benefits of ultrasound-assisted and electrochemical green synthesis methods, including examples like sebacic acid and adiponitrile production.	Evaluate environmentally benign alternatives to traditional organic solvents, including ionic liquids, aqueous phases, fluorous solvents, supercritical CO_2, and ethyl lactate.	Comprehend the role and mechanisms of green synthesis for nanomaterials, employing techniques like microwave and microbial synthesis for quantum dots and nanoparticles.	Develop problem-solving skills to assess the applicability of Green Chemistry principles and techniques to solve environmental and sustainability challenges in chemical processes.
M.Sc.(Previous) Chemistry	**(Analytical Chemistry)VI**	Apply statistical concepts and chemometrics to evaluate analytical data, assessing accuracy, precision, errors, and drawing valid conclusions.	Design and implement appropriate sampling techniques for various types of samples (gases, fluids, solids, particulates), ensuring representativeness and minimizing variables.	Utilize solvent extraction methods for sample preparation and analyte isolation, understanding the principles, instrumentation, and applications.	Analyze and interpret conductometric and potentiometric measurements for various analytical applications, including titrations, pH determination, and ion-selective electrode measurements.	Explain the principles and applications of coulometry for quantitative analysis, distinguishing between constant current and constant potential methods.	Apply atomic absorption spectroscopy for elemental analysis, understanding the Grotrian diagram, instrumentation, and factors affecting sensitivity and detection limits.	Conduct food analysis to determine major constituents (moisture, ash, protein, fat, fiber, carbohydrates, minerals), identify adulterants and contaminants, and analyze pesticide residues using chromatographic techniques.
M.Sc.(Final) Chemistry	**(Solid, Photo & Spectroscopy)I**	Master principles and applications of UV-vis and IR spectroscopy for analyzing electronic transitions and vibrational frequencies of organic molecules, including carbonyl compounds, conjugated systems, and aromatic compounds.	Utilize Mossbauer spectroscopy and electron microscopy techniques (SEM, TEM, AFM) to investigate the structure, bonding, and oxidation states of transition metal complexes and other materials.	Apply optical rotatory dispersion (ORD) and circular dichroism (CD) methods to determine the absolute configuration of optically active molecules and predict their stereochemical conformations.	Explain principles and applications of NMR spectroscopy, particularly FT-NMR and carbon-13 NMR, for characterizing organic molecules based on chemical shifts, coupling constants, and various two-dimensional techniques.	Utilize mass spectrometry with different ionization techniques (EI, CI, FD, FAB) to analyze organic compounds, interpret fragmentation patterns, and identify molecular structures based on characteristic peaks and rules.	Understand mechanisms of photochemical reactions, including excited state behavior, rate constants, and influence of light intensity, and apply them to study intramolecular and intermolecular reactions of alkenes, carbonyl compounds, and aromatic compounds.	Analyze solid-state reactions, including their kinetics and mechanisms, and explain the relationship between crystal defects (point, line, plane), non-stoichiometry, and electronic properties of materials like metals, insulators, semiconductors, and organic solids.
M.Sc.(Final) Chemistry	**(Bio Inorganic, Bio Organic and Bio Physical Chemistry)II**	Comprehend roles and mechanisms of essential metal ions (Na, K, Mg, Ca, Fe, Cu, Zn, Co, etc.) in various biological systems, including the K^+/Na^+ pump, oxygen transport through haem proteins, and electron transfer via metalloproteins.	Explain principles and mechanisms of biological nitrogen fixation, both enzymatic (nitrogenase) and chemical approaches, emphasizing the importance of this process for nitrogen availability in ecosystems.	Understand core concepts of bioorganic chemistry, including proximity effects, molecular adaptation, enzyme structure and function, catalytic power, specificity, and regulation mechanisms.	Apply Fischer's lock-and-key and Koshland's induced-fit models to analyze enzyme active sites and their interactions with substrates and inhibitors.	Explain various enzymatic reaction mechanisms, including examples like chymotrypsin, ribonuclease, lysozyme, and carboxypeptidase, focusing on nucleophilic displacements, transfer reactions, and other processes.	Describe structure and functions of key coenzymes (CoA, TPP, PLP, NAD/P, FMN/FAD, etc.) and their involvement in enzymatic reactions catalyzed by these cofactors.	Analyze bioenergetics through standard free energy changes, ATP hydrolysis and synthesis, and apply statistical mechanics principles to understand chain configuration and dimensions of biopolymers like proteins.
M.Sc.(Final) Chemistry	**(Environmental Chemistry)III**	Understand the composition and structure of the atmosphere, including its layers, temperature profiles, heat radiation, and biogeochemical cycles of various elements.	Explain the sources and chemistry of trace atmospheric constituents, such as nitrogen oxides, sulfur dioxide, carbon oxides, and chlorofluorocarbons.	Analyze the mechanisms of tropospheric photochemistry, including the decomposition of NO_2, formation of ozone, and reactions of hydroxyl radicals with methane and other organic compounds.	Identify and classify air pollutants, including aerosols, acid rain precursors, and greenhouse gases, and explain their harmful effects on the environment and human health.	Describe the chemistry and consequences of stratospheric ozone depletion, understanding the role of catalytic cycles and the importance of monitoring ozone depletion gases.	Analyze the sources and treatment of water pollution, focusing on redox chemistry, dissolved oxygen, biochemical oxygen demand, and eutrophication.	Explain the toxicity of heavy metals and organic compounds, such as pesticides and polychlorinated biphenyls, and discuss the environmental impacts of soil pollution and major environmental disasters.
M.Sc.(Final) Chemistry	**(Organic Synthesis I)IV**	Master principles, preparation, properties, and applications of various organometallic reagents from Group 1, 2, and Transition Metals in organic synthesis, with detailed mechanistic descriptions.	Explain and apply various oxidation processes to different functional groups using diverse reagents.	Analyze and utilize various reduction techniques for transforming diverse groups, understanding specific methods.	Investigate and comprehend key rearrangements in organic synthesis, focusing on mechanisms and general considerations.	Explore structure, synthesis, and reactivity of metallenes and nonbenzenoid aromatic compounds alongside polycyclic aromatic compounds.	Master the "disconnect approach" in organic synthesis, designing multi-step synthetic routes for complex molecules considering chemoselectivity, protecting groups, and regioselectivity.	Combine knowledge of organometallic reagents, oxidation/reduction, rearrangements, aromatics, and synthetic strategies for total synthesis of diverse organic molecules, choosing the most efficient route and executing multi-step syntheses with precision.
M.Sc.(Final) Chemistry	**(Organic Synthesis II)V**	Master the "disconnect approach" in organic synthesis, prioritizing efficient event order for successful multi-step syntheses.	Apply one-group and two-group C-X disconnection analysis, considering chemoselectivity and protecting groups.	Design and execute syntheses for alkenes via one-group C-C disconnection, incorporating acetylenes and aliphatic nitro compounds.	Plan multi-step organic syntheses using two-group C-C disconnection strategies, leveraging the Diels-Alder reaction and controlling factors in carbonyl condensations.	Analyze and utilize Michael addition and Robinson annelation reactions within two-group C-C disconnection frameworks.	Develop advanced synthetic skills by effectively employing 1,2-, 1,4-, and 1,6-difunctionalised compounds for ring synthesis.	Expand synthetic repertoire by exploring specialized methods like ketenes, pericyclic reactions, and photochemical reactions.
M.Sc.(Final) Chemistry	**(Heterocyclic Chemistry)VI**	Master heterocyclic nomenclature systems for monocyclic, fused, and bridged structures.	Analyze heterocyclic aromaticity using various criteria, classifying and predicting their reactivity and tautomerism.	Understand strain effects in small ring heterocycles and their conformational preferences.	Analyze stereo-electronic effects in heterocyclic systems, including hydrogen bonding and intermolecular interactions.	Develop knowledge of heterocyclic synthesis principles and apply them to design synthetic routes.	Gain expertise in the synthesis and reactions of various three-membered, four-membered, benzo-fused five-membered, and meso-ionic heterocycles.	Comprehensively study six-membered heterocycles with one or more heteroatoms, understanding their synthesis, reactions, and spectral characteristics.
M.Sc.(Final) Chemistry	**(Natural Products)VII**	Master terpenoid and carotenoid chemistry, including their classification, nomenclature, occurrence, isolation, structure determination, isoprene rule, and biosynthesis.	Gain expertise in alkaloid characterization, covering definition, nomenclature, physiological actions, occurrence, isolation, structure elucidation, classification, and role in plants. Understand the structure, stereochemistry, synthesis, and biosynthesis of key alkaloids.	Thoroughly comprehend steroids, including their occurrence, nomenclature, basic skeleton, structure, stereochemistry, isolation, structure determination, and synthesis techniques for prominent steroids like cholesterol, bile acids, sex hormones (androgens, estrogens, progesterone), and aldosterone, along with their biosynthetic pathways.	Analyze the occurrence, nomenclature, structure determination methods, isolation, and synthesis of various plant pigments. Focus on examples like apigenin, luteolin, quercetin, diadzein, cyanidin, and hirsutidin, understanding their flavonoid biosynthetic pathways (acetate and shikimic acid).	Gain in-depth knowledge of porphyrins, especially the structure and synthesis of haemoglobin and chlorophyll.	Understand prostaglandins, including their occurrence, nomenclature, classification, biogenesis, and physiological effects. Analyze Corey's synthesis of PGE1 and PGF2α.	Explore the chemistry of pyrethroids and rotenones, understanding their synthesis and reactivities.

M.Sc. Chemistry Program Summary Sheet			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	**Strong Foundation in Fundamentals: Possess a deep understanding of core chemical principles and concepts across various branches, including inorganic, organic, analytical, physical, and theoretical chemistry.**	**Higher Education & Research: Prepared for advanced studies in chemistry or related fields (PhD, research positions).**	**Employment in Chemistry: Significant proportion of graduates employed in responsible chemistry-related positions within five years of graduation.**
PO2/PSO2/PEO2	**Problem-Solving and Innovation: Apply chemical knowledge to tackle scientific challenges and develop creative solutions in diverse fields like academia, industry, research, and environmental sectors.**	**Chemical Industry Careers: Equipped for diverse roles in the chemical industry (R&D, quality control, process engineering, materials science).**	**Further Education: Significant proportion of graduates pursuing higher education (PhD, research positions) within five years of graduation.**
PO3/PSO3/PEO3	**Critical Thinking and Problem-Solving: Develop critical thinking skills to analyze complex problems, interpret data, and draw sound conclusions.**	**Scientific & Technological Advancement: Possess skills and knowledge to contribute to research and technological innovations across various fields.**	**Leadership and Contributions: Significant proportion of graduates recognized as leaders in their fields, making impactful contributions to research and technology within ten years of graduation.**
PO4/PSO4/PEO4	**Effective Communication: Communicate scientific concepts and findings effectively, both verbally and in writing, catering to diverse audiences.**	**Societal Challenges: Apply chemical expertise to tackle critical issues like environmental pollution, energy sustainability, and healthcare solutions.**	**Societal Impact: Significant proportion of graduates actively engaged in solving critical societal challenges using their chemical expertise within ten years of graduation.**
PO5/PSO5/PEO5	**Ethical and Professional Conduct: Uphold the highest standards of integrity and responsibility in academic and professional endeavors, demonstrating ethical and professional conduct.**	**Teamwork & Collaboration: Develop strong teamwork and collaboration skills for effective contribution in diverse teams and positive work environments.**	**Ethical & Professional Conduct: Significant proportion of graduates recognized for their ethical and professional conduct, serving as role models for future chemists within ten years of graduation.**

Mapping of Course Outcomes of Various Courses of M.Sc. Chemistry Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)

Course Outcome (CO)	POs	PSOs	PEOs	Bloom's Taxonomy Level
M.Sc.Previous INORGANIC CHEMISTRY				
CO1. Master the foundational principles of symmetry and group theory for analyzing molecular arrangements and spectroscopic data.	PO1	PSO1, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (Medium)
CO2. Comprehend the VSEPR theory and Walsh diagrams for predicting shapes and stabilities of molecules involving main group elements.	PO1	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Apply (Medium)
CO3. Differentiate between crystal field theory and molecular orbital theory, and apply them to understand metal complex bonding in various geometries.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (High)
CO4. Interpret electronic spectra and magnetic properties of transition metal complexes using Orgel/Tanabe-Sugano diagrams and spectroscopic methods.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)
CO5. Explain reaction mechanisms of transition metal complexes, including substitution, redox, and electron transfer processes, for predicting reactivity and kinetics.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)
CO6. Utilize the principles of nuclear and radiochemistry in understanding radioactive decay, radiation detection, and activation analysis for diverse applications.	PO1, PO2	PSO1, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate (Medium-High)
CO7. Develop critical thinking and problem-solving skills for applying theoretical knowledge to analyze chemical phenomena and interpret experimental data in the realm of inorganic chemistry.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4, PEO5	Analyze, Evaluate, Create (High)
M.Sc.Previous ORGANIC CHEMISTRY				
CO1. Comprehend the principles of delocalized chemical bonding, aromaticity, and their influence on the structure and reactivity of organic molecules.	PO1	PSO1, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (Medium)
CO2. Master the concepts of stereochemistry, including conformational analysis, chirality, and diastereoisomerism, and apply them to predict molecular properties and reactivity.	PO1	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Apply (Medium)
CO3. Explain the mechanisms of various organic reactions, including nucleophilic and electrophilic substitution, free radical reactions, and addition reactions, with focus on factors influencing rate and selectivity.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High0

CO4. Differentiate and analyze aromatic electrophilic and nucleophilic substitutions, understanding the unique reactivity patterns based on the arenium ion mechanism and electronic effects.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)
CO5. Describe the mechanisms of addition reactions to carbon-carbon and carbon-hetero multiple bonds, including hydrogenation, hydroboration, and enolate condensation reactions, focusing on stereochemical control and influencing factors.	PO1	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Apply (Medium-High)
CO6. Explain the principles of elimination reactions (E2, E1, E1cB), pericyclic reactions (concerted, disrotatory, conrotatory, suprafacial, antarafacial), and sigmatropic rearrangements, utilizing frontier orbital theory and Woodward-Hoffmann rules.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)
CO7. Develop problem-solving skills to apply theoretical knowledge of organic reaction mechanisms and stereochemistry to predict product formation, selectivity, and reactivity in complex molecules.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4, PEO5	Analyze, Evaluate, Create (High)
M.Sc.Previous PHYSICAL CHEMISTRY				
CO1. Master the fundamental principles of quantum mechanics, including the Schrodinger equation, model systems, and angular momentum.	PO1, PO3	PSO1, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (High)
CO2. Apply approximation methods such as variation theory and perturbation theory to analyze the electronic structure of atoms and molecules.	PO1, PO3	PSO1, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate (High)
CO3. Utilize molecular orbital theory, particularly Huckel theory, to understand bonding, charge distribution, and reactivity in conjugated systems.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (Medium-High)
CO4. Explain the concepts of classical thermodynamics, non-ideal systems, and phase transitions, and apply them to chemical equilibria and phase behavior.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High)
CO5. Utilize statistical thermodynamics principles, including distribution functions, ensembles, and partition functions, to calculate thermodynamic properties of various systems.	PO1, PO2, PO3	PSO1, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate (High)
CO6. Analyze chemical reaction dynamics using collision theory, activated complex theory, and various kinetic methods, interpreting factors influencing reaction rates and mechanisms.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)

CO7. Understand surface chemistry phenomena like adsorption, micelles, and macromolecules, applying relevant theories and methods for characterization and behavior prediction.	PO1, PO2	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (Medium-High)
CO8. Explain the principles of electrochemistry, including interfacial thermodynamics, electrode kinetics, and charge transfer, emphasizing their applications in various electrochemical processes.	PO1, PO2	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (Medium-High)
M.Sc.Previous SPECTROSCOPY				
CO1. Comprehend the unifying principles of spectroscopy, including electromagnetic radiation interaction with matter, selection rules, and transition probabilities.	PO1, PO3	PSO1, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (Medium)
CO2. Analyze the structure and dynamics of molecules using microwave spectroscopy, understanding the effects of isotopic substitution and external fields.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High)
CO3. Interpret vibrational transitions and spectra obtained through infrared and Raman spectroscopy, applying techniques like normal coordinate analysis and group frequencies.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (Medium-High)
CO4. Explain the principles of atomic and molecular electronic spectroscopy, analyzing energy levels, vibronic transitions, and photoelectron spectra for structural elucidation.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (High)
CO5. Utilize nuclear magnetic resonance spectroscopy (NMR) to probe molecular structure and dynamics, interpreting chemical shifts, coupling constants, and relaxation phenomena.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate (High)
CO6. Apply electron spin resonance spectroscopy (ESR) to understand the electronic structure and magnetic properties of molecules, focusing on hyperfine coupling and spin densities.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate (High)
CO7. Master various diffraction techniques like X-ray, electron, and neutron diffraction for determining the crystalline and molecular structures of materials, including absolute configuration determination.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (High)
M.Sc.Previous GREEN CHEMISTRY				
CO1. Master the principles and concepts of Green Chemistry, including the twelve principles and their application in designing sustainable chemical processes.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Understand, Analyze (Medium-High)

CO2. Utilize non-traditional and greener alternative approaches in organic synthesis, such as green reagents, catalysts, and non-conventional energy sources.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate (Medium-High)
CO3. Explain the advantages and applications of microwave-assisted synthesis, particularly for specific organic transformations and heterocyclic ring formation.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium)
CO4. Analyze the principles and benefits of ultrasound-assisted and electrochemical green synthesis methods, including examples like sebacic acid and adiponitrile production.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (Medium-High)
CO5. Evaluate environmentally benign alternatives to traditional organic solvents, including ionic liquids, aqueous phases, fluorous solvents, supercritical CO2, and ethyl lactate.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (Medium-High)
CO6. Comprehend the role and mechanisms of green synthesis for nanomaterials, employing techniques like microwave and microbial synthesis for quantum dots and nanoparticles.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Understand (Medium-High)
CO7. Develop problem-solving skills to assess the applicability of Green Chemistry principles and techniques to solve environmental and sustainability challenges in chemical processes.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4, PEO5	Apply, Evaluate, Create (High)
M.Sc.Previous ANALYTICAL CHEMISTRY				
CO1. Apply statistical concepts and chemometrics to evaluate analytical data, assessing accuracy, precision, errors, and drawing valid conclusions.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze, Evaluate (Medium-High)
CO2. Design and implement appropriate sampling techniques for various types of samples (gases, fluids, solids, particulates), ensuring representativeness and minimizing variables.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze (Medium-High)
CO3. Utilize solvent extraction methods for sample preparation and analyte isolation, understanding the principles, instrumentation, and applications.	PO1, PO2	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Apply, Analyze (Medium)
CO4. Analyze and interpret conductometric and potentiometric measurements for various analytical applications, including titrations, pH determination, and ion-selective electrode measurements.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Apply, Evaluate (Medium-High)
CO5. Explain the principles and applications of coulometry for quantitative analysis, distinguishing between constant current and constant potential methods.	PO1, PO2	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Understand (Medium)

CO6. Apply atomic absorption spectroscopy for elemental analysis, understanding the Grotrian diagram, instrumentation, and factors affecting sensitivity and detection limits.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Apply, Analyze (Medium-High)
CO7. Conduct food analysis to determine major constituents (moisture, ash, protein, fat, fiber, carbohydrates, minerals), identify adulterants and contaminants, and analyze pesticide residues using chromatographic techniques.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze, Evaluate (High)
M.Sc. Final SOLID STATE, PHOTO & SPECTROSCOPY				
CO1. Master the principles and applications of UV-vis and IR spectroscopy for analyzing electronic transitions and vibrational frequencies of organic molecules, including carbonyl compounds, conjugated systems, and aromatic compounds.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High)
CO2. Utilize Mossbauer spectroscopy and electron microscopy techniques (SEM, TEM, AFM) to investigate the structure, bonding, and oxidation states of transition metal complexes and other materials.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate (High)
CO3. Apply optical rotatory dispersion (ORD) and circular dichroism (CD) methods to determine the absolute configuration of optically active molecules and predict their stereochemical conformations.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (High)
CO4. Explain the principles and applications of NMR spectroscopy, particularly FT-NMR and carbon-13 NMR, for characterizing organic molecules based on chemical shifts, coupling constants, and various two-dimensional techniques.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Evaluate (High)
CO5. Utilize mass spectrometry with different ionization techniques (EI, CI, FD, FAB) to analyze organic compounds, interpret fragmentation patterns, and identify molecular structures based on characteristic peaks and rules.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze, Evaluate (High)
CO6. Understand the mechanisms of photochemical reactions, including excited state behavior, rate constants, and influence of light intensity, and apply them to study intramolecular and intermolecular reactions of alkenes, carbonyl compounds, and aromatic compounds.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Apply (Medium-High)

CO7. Analyze solid-state reactions, including their kinetics and mechanisms, and explain the relationship between crystal defects (point, line, plane), non-stoichiometry, and electronic properties of materials like metals, insulators, semiconductors, and organic solids.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)
M.Sc. Final BIOINORGANIC BIOORGANIC & BIOPHYSICAL CHEMISTRY				
CO1. Comprehend the roles and mechanisms of essential metal ions (Na, K, Mg, Ca, Fe, Cu, Zn, Co, etc.) in various biological systems, including the K+/Na+ pump, oxygen transport through haem proteins, and electron transfer via metalloproteins.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Understand, Analyze (Medium)
CO2. Explain the principles and mechanisms of biological nitrogen fixation, both enzymatic (nitrogenase) and chemical approaches, emphasizing the importance of this process for nitrogen availability in ecosystems.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Understand (Medium)
CO3. Understand the core concepts of bioorganic chemistry, including proximity effects, molecular adaptation, enzyme structure and function, catalytic power, specificity, and regulation mechanisms.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (Medium)
CO4. Apply Fischer's lock-and-key and Koshland's induced-fit models to analyze enzyme active sites and their interactions with substrates and inhibitors.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Apply, Analyze (Medium)
CO5. Explain various enzymatic reaction mechanisms, including examples like chymotrypsin, ribonuclease, lysozyme, and carboxypeptidase, focusing on nucleophilic displacements, transfer reactions, and other processes.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Understand (Medium-High)
CO6. Describe the structure and functions of key coenzymes (CoA, TPP, PLP, NAD/P, FMN/FAD, etc.) and their involvement in enzymatic reactions catalyzed by these cofactors.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (Medium)
CO7. Analyze bioenergetics through standard free energy changes, ATP hydrolysis and synthesis, and apply statistical mechanics principles to understand chain configuration and dimensions of biopolymers like proteins.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High)
M.Sc. Final ENVIRONMENTAL CHEMISTRY				
CO1. Understand the composition and structure of the atmosphere, including its layers, temperature profiles, heat radiation, and biogeochemical cycles of various elements.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Understand, Analyze (Medium)

CO2. Explain the sources and chemistry of trace atmospheric constituents, such as nitrogen oxides, sulfur dioxide, carbon oxides, and chlorofluorocarbons.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Understand (Medium)
CO3. Analyze the mechanisms of tropospheric photochemistry, including the decomposition of NO2, formation of ozone, and reactions of hydroxyl radicals with methane and other organic compounds.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High)
CO4. Identify and classify air pollutants, including aerosols, acid rain precursors, and greenhouse gases, and explain their harmful effects on the environment and human health.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (Medium-High)
CO5. Describe the chemistry and consequences of stratospheric ozone depletion, understanding the role of catalytic cycles and the importance of monitoring ozone depletion gases.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Understand (Medium-High)
CO6. Analyze the sources and treatment of water pollution, focusing on redox chemistry, dissolved oxygen, biochemical oxygen demand, and eutrophication.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High)
CO7. Explain the toxicity of heavy metals and organic compounds, such as pesticides and polychlorinated biphenyls, and discuss the environmental impacts of soil pollution and major environmental disasters.	PO1, PO2, PO3	PSO1, PSO2, PSO3, PSO4	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)
M.Sc. Final ORGANIC SYNTHESIS-I				
CO1. Master the principles, preparation, properties, and applications of various organometallic reagents from Group 1, 2, and Transition Metals in organic synthesis, including detailed mechanistic descriptions of their reactions.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Understand (High)
CO2. Explain and apply various oxidation processes to different functional groups using diverse reagents, understanding the mechanisms and selectivities involved.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze (High)
CO3. Analyze and utilize various reduction techniques for transforming different functional groups, understanding specific methods and mechanisms with focus on chemoselectivity.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze (High)
CO4. Investigate and comprehend the mechanisms of key rearrangements in organic synthesis, focusing on migratory aptitude, memory effects, and general considerations.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Evaluate (High)

CO5. Explore the structure, synthesis, and reactivity of metallenes, nonbenzenoid aromatic compounds, and polycyclic aromatic compounds.	PO1, PO2	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (Medium-High)
CO6. Master the "disconnect approach" in organic synthesis. Design multi-step synthetic routes for complex molecules using synthons, disconnections, functional group interconversions, and efficient event order. Consider chemoselectivity, protecting groups, and regioselectivity while planning your synthetic campaigns.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Create (High)
CO7. Combine your knowledge of organometallic reagents, oxidation/reduction techniques, rearrangements, aromatics, and synthetic strategies to tackle the total synthesis of diverse organic molecules. Analyze the feasibility of different approaches, choose the most efficient route, and execute multi-step syntheses with precision and control.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Evaluate, Create (High)
M.Sc. Final ORGANIC SYNTHESIS-II				
CO1. Master the "disconnect approach" in organic synthesis, identifying synthons, synthetic equivalents, and functional group interconversions, prioritizing efficient event order for successful multi-step syntheses.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Create (High)
CO2. Apply one-group and two-group C-X disconnection analysis to various molecules, considering chemoselectivity, reversal of polarity, and strategic use of protecting groups for alcohols, amines, carbonyls, and carboxyls.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze (High)
CO3. Design and execute syntheses for alkenes via one-group C-C disconnection, utilizing common starting materials like alcohols and carbonyl compounds, while understanding regioselectivity and incorporating acetylenes and aliphatic nitro compounds.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze (High)
CO4. Plan multi-step organic syntheses for complex molecules using two-group C-C disconnection strategies, leveraging the Diels-Alder reaction, 1,3-difunctionalised compounds, a,β-unsaturated carbonyl systems, and controlling factors in carbonyl condensations.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Create (High)

CO5. Analyze and utilize Michael addition and Robinson annelation reactions within two-group C-C disconnection frameworks, building intricate carbon skeletons with precise control and efficiency.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze (High)
CO6. Develop advanced synthetic skills by effectively employing 1,2-, 1,4-, and 1,6-difunctionalised compounds for ring synthesis, particularly saturated heterocycles (3-, 4-, 5-, and 6-membered rings).	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Create (High)
CO7. Expand synthetic repertoire by exploring specialized methods like ketenes, pericyclic reactions (e.g., photochemical additions, cycloadditions), and photochemical reactions for accessing diverse and valuable organic products.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (High)
M.Sc. Final HETEROCYCLIC CHEMISTRY				
CO1. Master the nomenclature of heterocyclic compounds, employing both replacement and systematic (Hantzsch-Widman) systems for monocyclic, fused, and bridged structures.	PO1, PO2	PSO1, PSO2	PEO1, PEO2, PEO3	Understand, Apply (Medium)
CO2. Analyze the aromaticity of heterocycles, applying criteria like bond lengths, ring current, NMR shifts, resonance energy, and diamagnetic susceptibility to classify and predict their reactivity and tautomerism.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Analyze (Medium-High)
CO3. Understand the impact of strain-bond angles and torsional strains in small ring heterocycles, explaining their conformational preferences and the influence of 1,3-diaxial interactions.	PO1, PO2	PSO1, PSO2	PEO1, PEO2, PEO3	Analyze, Understand (Medium)
CO4. Analyze stereo-electronic effects like anomeric and related phenomena, including attractive interactions like hydrogen bonding and intermolecular nucleophilic-electrophilic interactions, in heterocyclic systems.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (Medium-High)
CO5. Develop knowledge of heterocyclic synthesis principles, including cyclization and cycloaddition reactions, and apply them to design synthetic routes for diverse ring systems.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Apply, Create (Medium-High)
CO6. Gain expertise in the synthesis and reactions of various heterocycles, including three-membered and four-membered rings (aziridines, oxiranes, thiiranes, etc.), benzo-fused five-membered rings (benzopyrroles, benzofurans, benzothiophenes), and meso-ionic heterocycles.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply (High)

CO7. Comprehensively study six-membered heterocycles with one or more heteroatoms, including pyrylium/pyridinium salts, pyrones/pyridones, quinolizinium/benzopyrylium salts, coumarins/chromones, diazines/triazines/tetrazines/thiazines, and heterocycles containing P, As, Sb, and B, understanding their synthesis, reactions, and spectral characteristics.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Understand (High)
M.Sc. Final NATURAL PRODUCTS CHEMISTRY				
CO1. Master terpenoid and carotenoid chemistry, including classification, nomenclature, occurrence, isolation, structure determination, isoprene rule, and biosynthesis. Analyze specific examples like citral, geraniol, menthol, farnesol, etc., in terms of structure, stereochemistry, and synthesis.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Understand (Medium-High)
CO2. Gain expertise in alkaloid characterization, covering their definition, nomenclature, physiological actions, occurrence, isolation, structure elucidation, degradation, classification based on nitrogen heterocyclic rings, and role in plants. Understand the structure, stereochemistry, synthesis, and biosynthesis of key alkaloids like ephedrine, coniine, nicotine, etc.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Understand (High)
CO3. Thoroughly comprehend steroids, including their occurrence, nomenclature, basic skeleton, Diels' hydrocarbon structure, and stereochemistry. Learn isolation, structure determination, and synthesis techniques for prominent steroids like cholesterol, bile acids, sex hormones (androgens, estrogens, progesterone), and aldosterone, along with their biosynthetic pathways.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Understand (High)
CO4. Analyze the occurrence, nomenclature, structure determination methods, isolation, and synthesis of various plant pigments. Focus on examples like apigenin, luteolin, quercetin, diadzein, cyanidin, and hirsutidin, understanding their flavonoid biosynthetic pathways (acetate and shikimic acid).	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Apply, Understand (Medium-High)
CO5. Gain in-depth knowledge of porphyrins, especially the structure and synthesis of haemoglobin and chlorophyll.	PO1, PO2	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Understand (Medium-High)

CO6. Understand prostaglandins, including their occurrence, nomenclature, classification, biogenesis, and physiological effects. Analyze Corey's synthesis of PGE1 and PGF2α.	PO1, PO2, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3, PEO4	Analyze, Understand (Medium-High)
CO7. Explore the chemistry of pyrethroids and rotenones, understanding their synthesis and reactivities.	PO1, PO2	PSO1, PSO2, PSO3	PEO1, PEO2, PEO3	Analyze, Understand (Medium)

B.Sc. Mathematics Course Outcomes Summary Sheet

Course	Paper	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.Sc.Part I	Discrete Mathematics	CO1: Understand basic concepts of sets, relations, and functions.	CO2: Apply principle of inclusion-exclusion for counting problems.	CO3: Prove mathematical statements using mathematical induction.	CO4: Understand Boolean algebra and perform basic operations.	CO5: Analyze logical structure of propositions and arguments.
B.Sc.Part I	Calculus	CO1: Understand concept of derivative and find derivatives of various functions.	CO2: Apply derivative to solve optimization problems.	CO3: Understand concept of integration and find integrals of various functions.	CO4: Apply integral to solve problems in area, volume, and work.	CO5: Understand concept of infinite series and test for convergence.
B.Sc.Part I	Analytic Geometry and Optimization Theory	CO1: Understand basic concepts of analytic geometry (lines, planes, conic sections).	CO2: Solve problems involving intersection of lines and planes.	CO3: Understand concept of optimization and solve linear programming problems.	CO4: Apply simplex method to solve linear programming problems.	CO5: Understand duality and solve dual problems.
B.Sc.Part II	Real Analysis	CO1: Understand basic concepts (limits, continuity, differentiation).	CO2: Prove Bolzano-Weierstrass and Heine-Borel theorems.	CO3: Understand Riemann integration and find integrals of various functions.	CO4: Apply integral to solve problems in area, volume, and work.	CO5: Understand infinite series and test for convergence.
B.Sc.Part II	Differential Equations and Partial Differential Equations	CO1: Understand basic concepts of differential equations (order, degree, solution methods).	CO2: Solve first-order differential equations of various types.	CO3: Understand linear differential equations and solve second-order linear differential equations.	CO4: Apply differential equations to solve problems in various fields.	CO5: Understand basic concepts of partial differential equations and solve some simple examples.
B.Sc.Part II	Numerical Analysis and Vector Calculus	CO1: Understand basic concepts of numerical analysis (interpolation, differentiation, integration).	CO2: Use numerical methods to solve problems in various fields.	CO3: Understand basic concepts of vector calculus (gradient, divergence, curl).	CO4: Apply vector calculus to solve problems in various fields.	
B.Sc.Part III	Abstract Algebra	CO1: Understand basic concepts of abstract algebra (groups, rings, fields).	CO2: Prove basic theorems about groups, rings, and fields.	CO3: Apply abstract algebra to solve problems in cryptography and coding theory.	CO4: Understand concept of vector space and perform basic operations on vectors.	CO5: Apply vector spaces to solve problems in various fields.
B.Sc.Part III	Complex Analysis	CO1: Understand basic concepts of complex analysis (complex numbers, analytic functions, complex integration).	CO2: Prove Cauchy-Riemann equations and Cauchy integral theorem.	CO3: Apply complex analysis to solve problems in fluid dynamics and electromagnetism.	CO4: Understand concept of residue and use residue theorem to evaluate integrals.	CO5: Apply residue theorem to solve problems in physics and engineering.
B.Sc.Part III	Mechanics	CO1: Understand basic concepts of mechanics (motion, forces, energy).	CO2: Solve problems involving linear motion, projectile motion, and circular motion.	CO3: Understand concept of moment of inertia and calculate moments of inertia of various objects.	CO4: Apply principles of equilibrium to solve problems involving forces and moments.	CO5: Understand concept of virtual work and use it to solve problems in statics and dynamics.

B.Sc. Mathematics Program Summary Sheet:			
S.NO.	Program Outcomes (POs):	Program Specific Outcomes (PSOs):	Program Educational Objectives (PEOs):
PO1/PSO1/PEO1	Demonstrate thorough understanding of fundamental mathematical concepts, theories, and techniques.	Apply mathematical concepts and tools to solve problems in calculus, real analysis, differential equations, numerical analysis, vector calculus, abstract algebra, complex analysis, and mechanics.	Graduates will be able to demonstrate a mastery of fundamental mathematical concepts and techniques.
PO2/PSO2/PEO2	Apply mathematical reasoning and problem-solving skills to solve complex problems in various fields.	Use mathematical software and programming tools to solve mathematical problems.	Graduates will be able to apply their mathematical knowledge to solve problems in a variety of fields.
PO3/PSO3/PEO3	Communicate mathematical ideas clearly and concisely, both orally and in writing.	Design and conduct mathematical research projects.	Graduates will be able to communicate mathematical ideas effectively to a variety of audiences.
PO4/PSO4/PEO4	Work independently and collaboratively as part of a team to achieve mathematical goals.	Communicate mathematical ideas effectively to a variety of audiences, including mathematicians and non-mathematicians.	Graduates will be able to work independently and collaboratively as part of a team.
PO5/PSO5/PEO5	Demonstrate understanding of the ethical responsibilities of mathematicians in society.	Pursue graduate studies in mathematics or related fields.	Graduates will be able to demonstrate an understanding of the ethical responsibilities of mathematicians in society.

Mapping of Course Outcomes of all courses of B.Sc. Mathematics with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
B.Sc. Part-I Discrete Mathematics				
CO1: Understand basic concepts of sets, relations, and functions.	PO1	PSO1	PEO1	Understand (Low)
CO2: Apply principle of inclusion-exclusion for counting problems.	PO2	PSO1	PEO2	Apply (Medium)
CO3: Prove mathematical statements using mathematical induction.	PO1	PSO1	PEO1	Analyze (High)
CO4: Understand Boolean algebra and perform basic operations.	PO1	PSO1	PEO1	Understand (Low)
CO5: Analyze logical structure of propositions and arguments.	PO3	PSO4	PEO3	Analyze (Medium)
B.Sc. Part-I Paper-II Calculus				
CO1: Understand concept of derivative and find derivatives of various functions.	PO1	PSO1	PEO1	Understand (Low)
CO2: Apply derivative to solve optimization problems.	PO2	PSO1	PEO2	Apply (Medium)
CO3: Understand concept of integration and find integrals of various functions.	PO1	PSO1	PEO1	Understand (Low)
CO4: Apply integral to solve problems in area, volume, and work.	PO2	PSO1	PEO2	Apply (Medium)
CO5: Understand concept of infinite series and test for convergence.	PO1	PSO1	PEO1	Analyze (Medium)
B.Sc. Part-I Paper-III Analytic Geometry and Optimization Theory				
CO1: Understand basic concepts of analytic geometry (lines, planes, conic sections).	PO1	PSO1	PEO1	Understand (Low)
CO2: Solve problems involving intersection of lines and planes.	PO2	PSO1	PEO2	Apply (Medium)
CO3: Understand concept of optimization and solve linear programming problems.	PO2	PSO1	PEO2	Understand (Medium)
CO4: Apply simplex method to solve linear programming problems.	PO2	PSO1	PEO2	Apply (High)
CO5: Understand duality and solve dual problems.	PO1	PSO1	PEO1	Analyze (High)
B.Sc. Part-II Paper-I Real Analysis				
CO1: Understand basic concepts (limits, continuity, differentiation).	PO1	PSO1	PEO1	Understand (Low)
CO2: Prove Bolzano-Weierstrass and Heine-Borel theorems.	PO1	PSO1	PEO1	Analyze (High)
CO3: Understand Riemann integration and find integrals of various functions.	PO1	PSO1	PEO1	Understand (Low)
CO4: Apply integral to solve problems in area, volume, and work.	PO2	PSO1	PEO2	Apply (Medium)
CO5: Understand infinite series and test for convergence.	PO1	PSO1	PEO1	Analyze (Medium)
B.Sc. Part-II Paper-II Differential Equations and Partial Differential Equations				
CO1: Understand basic concepts of differential equations (order, degree, solution methods).	PO1	PSO1	PEO1	Understand (Low)
CO2: Solve first-order differential equations of various types.	PO2	PSO1	PEO2	Apply (Medium)
CO3: Understand linear differential equations and solve second-order linear differential equations.	PO1	PSO1	PEO1	Understand (Medium)
CO4: Apply differential equations to solve problems in various fields.	PO2	PSO1	PEO2	Apply (High)
CO5: Understand basic concepts of partial differential equations and solve some simple examples.	PO1	PSO1	PEO1	Understand (Medium)
B.Sc. Part-II Paper-III Numerical Analysis and Vector Calculus				
CO1: Understand basic concepts of numerical analysis (interpolation, differentiation, integration).	PO1	PSO1	PEO1	Understand (Low)

CO2: Use numerical methods to solve problems in various fields.	PO2	PSO2	PEO2	Apply (High)
CO3: Understand basic concepts of vector calculus (gradient, divergence, curl).	PO1	PSO1	PEO1	Understand (Medium)
CO4: Apply vector calculus to solve problems in various fields.	PO2	PSO1	PEO2	Apply (High)
B.Sc. Part-III Paper-I Abstract Algebra				
CO1: Understand basic concepts of abstract algebra (groups, rings, fields).	PO1	PSO1	PEO1	Understand (Medium)
CO2: Prove basic theorems about groups, rings, and fields.	PO1	PSO1	PEO1	Analyze (High)
CO3: Apply abstract algebra to solve problems in cryptography and coding theory.	PO2	PSO1	PEO2	Apply (High)
CO4: Understand concept of vector space and perform basic operations on vectors.	PO1	PSO1	PEO1	Understand (Medium)
CO5: Apply vector spaces to solve problems in various fields.	PO2	PSO1	PEO2	Apply (High)
B.Sc. Part-III Paper-II Complex Analysis				
CO1: Understand basic concepts of complex analysis (complex numbers, analytic functions, complex integration).	PO1	PSO1	PEO1	Understand (Medium)
CO2: Prove Cauchy-Riemann equations and Cauchy integral theorem.	PO1	PSO1	PEO1	Analyze (High)
CO3: Apply complex analysis to solve problems in fluid dynamics and electromagnetism.	PO2	PSO1	PEO2	Apply (High)
CO4: Understand concept of residue and use residue theorem to evaluate integrals.	PO1	PSO1	PEO1	Analyze (High)
CO5: Apply residue theorem to solve problems in physics and engineering.	PO2	PSO1	PEO2	Apply (High)
B.Sc. Part-III Paper-III Mechanics				
CO1: Understand basic concepts of mechanics (motion, forces, energy).	PO1	PSO1	PEO1	Understand (Low)
CO2: Solve problems involving linear motion, projectile motion, and circular motion.	PO2	PSO1	PEO2	Apply (Medium)
CO3: Understand concept of moment of inertia and calculate moments of inertia of various objects.	PO1	PSO1	PEO1	Understand (Medium)
CO4: Apply principles of equilibrium to solve problems involving forces and moments.	PO2	PSO1	PEO2	Apply (High)
CO5: Understand concept of virtual work and use it to solve problems in statics and dynamics.	PO2	PSO1	PEO2	Apply (Medium)

M.Sc. Mathematics Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5	Course Outcome 6	Course Outcome 7
M.Sc.Previous Mathematics	Advanced Abstract Algebra	Demonstrate deep understanding of fundamental abstract algebra concepts.	Apply group theory concepts to solve problems involving direct and internal products, Sylow's theorems, and isomorphism theorems.	Analyze and solve problems involving polynomial rings, linear transformations, dual spaces, and field extensions.	Utilize Galois theory to understand the solvability of polynomial equations and apply it to solve related problems.	Represent linear maps using matrices, calculate eigenvalues and eigenvectors, and apply these concepts to solve various problems.	Analyze real inner product spaces, apply adjoint and orthogonal transformations, and utilize the Principal Axis Theorem.	
M.Sc.Previous Mathematics	Real Analysis and Topology	Apply measure theory concepts to analyze sets of real numbers and measurable functions.	Define and analyze Lebesgue integrals, utilize Fourier series and their coefficients, and apply convergence in measure and Egoroff's theorem.	Understand and apply concepts of L-spaces, Holder-Minkowski inequalities, and topological spaces, including separation axioms.	Analyze continuous mappings and homeomorphisms, apply nets and filters, and utilize separation axioms to categorize topological spaces.	Analyze and characterize compact and locally compact spaces, apply continuity and connectedness properties, and utilize the One-Point Compactification Theorem.		
M.Sc.Previous Mathematics	Differential Equations and Special Functions	Solve non-linear ordinary differential equations of particular forms, including Riccati's equation, and analyze total differential equations and partial differential equations of second order with variable coefficients.	Classify linear partial differential equations of second order, apply Cauchy's method and separation of variables to solve first-order partial differential equations, and analyze Laplace, Wave, and diffusion equations.	Define and analyze functionals and their variations.	Apply Euler's equation and variational principles to solve extremum problems, and utilize the method of Frobenius to solve differential equations near singular points.	Analyze and apply properties of Gauss hypergeometric functions, Bessel functions, Hermite polynomials, and Laguerre polynomials to solve problems.		
M.Sc.Previous Mathematics	Differential Geometry and Tensor Analysis	Analyze space curves and their properties, including curvature, torsion, and osculating circle, and utilize the Serret-Frenet formulae.	Define and analyze the metric of a surface and its fundamental forms, calculate and interpret curvature and torsion of a surface, and understand Weingarten equations.	Analyze normal curvature, principal directions and curvatures, asymptotic lines, and Gauss's formulae.	Define and analyze geodesics, Christoffel symbols, covariant differentiation, Riemann-Christoffel tensor, and covariant curvature tensor.	Understand and apply concepts of tensor analysis, including Kronecker delta, contravariant and covariant tensors, and Riemannian space.		
M.Sc. Final Mathematics	Analysis and Advanced Calculus	Demonstrate a deep understanding of metric spaces, normed linear spaces, and inner product spaces.	Apply concepts of completeness, compactness, separability, and connectedness in metric spaces.	Analyze and apply properties of bounded linear transformations, weak convergence, and dual spaces.	Understand and utilize the Hahn-Banach theorem, open mapping theorem, closed graph theorem, and uniform boundedness theorem.	Analyze Hilbert spaces, their properties, and the structure of a Hilbert space.	Apply concepts of adjoint operators, self-adjoint operators, projections, and spectral theorem.	
M.Sc. Final Mathematics	Fluid Dynamics	Understand and apply fundamental concepts of fluid mechanics and equations.	Analyze vorticity, circulation, similarity, and non-dimensional parameters.	Solve exact solutions for specific flow patterns.	Analyze specific flow types and apply boundary layer concepts.	Apply energy equation to analyze temperature distribution.		
M.Sc. Final Mathematics	Mathematical Programming	Understand and apply fundamental concepts of linear programming and simplex method.	Solve integer programming problems using specific algorithms.	Analyze and solve nonlinear programming problems using specific conditions and algorithms.	Apply quadratic programming techniques using specific methods.	Solve linear programming problems using dynamic programming.		
M.Sc. Final Mathematics	Integral Transform and Integral Equations	Apply Laplace, Fourier, Mellin, and Hankel transforms to solve specific problems.	Solve specific integral equations using various methods.	Understand and apply concepts of convolution theorems, resolvent kernels, and convergence.	Apply concepts to solve specific problems and analyze uniqueness of solutions.			
M.Sc. Final Mathematics	Advanced Numerical Analysis	Apply iterative methods to solve equations and systems.	Solve polynomial equations using specific methods.	Solve systems of linear equations using direct and iterative methods.	Calculate eigenvalues and eigenvectors using specific techniques.	Apply curve fitting and function approximation techniques to solve problems.	Solve ordinary differential equations numerically using specific methods and analyze stability.	Solve boundary value problems for ordinary differential equations using specific methods.

M.Sc. Mathematics Program Summary Sheet:			
S.NO.	**Program Outcomes (POs)**	**Program Specific Outcomes (PSOs)**	**Program Educational Objectives (PEOs)**
PO1/PSO1/PEO1	**Strong foundation in mathematics:** Graduates will demonstrate a deep understanding of fundamental concepts and methodologies in pure and applied mathematics, including algebra, analysis, topology, and differential equations.	**Advanced knowledge and skills in chosen specialization:** Graduates will gain in-depth knowledge and expertise in their chosen area of specialization within mathematics, such as numerical analysis, differential geometry, or mathematical physics.	**Successful careers in mathematics and related fields:** Graduates will be successful in their chosen careers in mathematics and related fields, contributing significantly to their chosen profession and making a positive impact on society.
PO2/PSO2/PEO2	**Problem-solving skills:** Graduates will be able to analyze complex problems, apply mathematical principles and techniques to find solutions, and interpret and communicate results effectively.	**Ability to conduct independent research:** Graduates will develop the skills and knowledge necessary to conduct independent research in mathematics, including formulating research questions, designing experiments, analyzing data, and presenting findings.	**Continual professional development:** Graduates will be committed to continual professional development, staying abreast of current advancements in their field and actively seeking opportunities to expand their knowledge and skills.
PO3/PSO3/PEO3	**Critical thinking and reasoning:** Graduates will develop strong critical thinking and reasoning skills, enabling them to evaluate arguments, identify assumptions, and form sound conclusions.	**Preparation for professional careers in mathematics:** Graduates will be well-prepared for professional careers in various fields that utilize their mathematical skills, such as research, teaching, finance, engineering, and data science.	**Leadership and innovation:** Graduates will be able to take on leadership roles and contribute to the development and implementation of new ideas and solutions in their field.
PO4/PSO4/PEO4	**Analytical and computational skills:** Graduates will acquire proficiency in analytical and computational methods, including numerical analysis, integral transforms, and optimization techniques.	**Effective communication of mathematical concepts:** Graduates will be able to effectively communicate complex mathematical concepts and ideas to both technical and non-technical audiences.	**Social responsibility and ethical behavior:** Graduates will be responsible and ethical individuals, applying their mathematical knowledge and skills to contribute to the solution of societal problems and promote positive change.
PO5/PSO5/PEO5	**Communication and collaboration skills:** Graduates will develop effective communication and collaboration skills, allowing them to clearly present their work, collaborate with others, and contribute to a team environment.	**Ethical conduct and professional responsibility:** Graduates will uphold high ethical standards and demonstrate professional responsibility in their work and interactions with colleagues and the broader community.	**Lifelong learning and intellectual curiosity:** Graduates will maintain a lifelong passion for learning and intellectual curiosity, continuously seeking new knowledge and understanding in mathematics and other disciplines.
PO6/PSO6/PEO6	**Lifelong learning:** Graduates will be committed to lifelong learning, able to adapt to new technologies and advancements in the field of mathematics.	-	-

Mapping of Course Outcomes of all courses of M.Sc. Mathematics with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

M.Sc. Previous Mathematics Paper-I: Advanced Abstract Algebra

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
Demonstrate deep understanding of fundamental abstract algebra concepts.	PO1	PSO1	PEO1, PEO2, PEO3	Understand (High)
Apply group theory concepts to solve problems involving direct and internal products, Sylow's theorems, and isomorphism theorems.	PO2, PO3	PSO2	PEO2	Apply (Medium)
Analyze and solve problems involving polynomial rings, linear transformations, dual spaces, and field extensions.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Analyze (Medium)
Utilize Galois theory to understand the solvability of polynomial equations and apply it to solve related problems.	PO2, PO3	PSO2	PEO2	Apply (High)
Represent linear maps using matrices, calculate eigenvalues and eigenvectors, and apply these concepts to solve various problems.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Apply (Medium)
Analyze real inner product spaces, apply adjoint and orthogonal transformations, and utilize the Principal Axis Theorem.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Analyze (High)
M.Sc. Previous Mathematics Paper-II: Real Analysis and Topology				
Apply measure theory concepts to analyze sets of real numbers and measurable functions.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (Medium)
Define and analyze Lebesgue integrals, utilize Fourier series and their coefficients, and apply convergence in measure and Egoroff's theorem.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Analyze (Medium)
Understand and apply concepts of L-spaces, Holder-Minkowski inequalities, and topological spaces, including separation axioms.	PO2, PO3	PSO2	PEO2	Understand (Medium)
Analyze continuous mappings and homeomorphisms, apply nets and filters, and utilize separation axioms to categorize topological spaces.	PO2, PO3	PSO2	PEO2	Analyze (High)
Analyze and characterize compact and locally compact spaces, apply continuity and connectedness properties, and utilize the One-Point Compactification Theorem.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Analyze (High)
M.Sc. Previous Mathematics Paper-III: Differential Equations and Special Functions				

Solve non-linear ordinary differential equations of particular forms, including Riccati's equation, and analyze total differential equations and partial differential equations of second order with variable coefficients.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (Medium)
Classify linear partial differential equations of second order, apply Cauchy's method and separation of variables to solve first-order partial differential equations, and analyze Laplace, Wave, and diffusion equations.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Analyze (Medium)
Define and analyze functionals and their variations.	PO2, PO3	PSO2	PEO2, PEO4	Understand (Medium)
Apply Euler's equation and variational principles to solve extremum problems, and utilize the method of Frobenius to solve differential equations near singular points.	PO2, PO3	PSO2	PEO2, PEO4	Apply (High)
Analyze and apply properties of Gauss hypergeometric functions, Bessel functions, Hermite polynomials, and Laguerre polynomials to solve problems.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Apply (Medium)
M.Sc. Previous Mathematics Paper-IV: Differential Geometry and Tensor Analysis				
Analyze space curves and their properties, including curvature, torsion, and osculating circle, and utilize the Serret-Frenet formulae.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Analyze (High)
Define and analyze the metric of a surface and its fundamental forms, calculate and interpret curvature and torsion of a surface, and understand Weingarten equations.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Analyze (High)
Analyze normal curvature, principal directions and curvatures, asymptotic lines, and Gauss's formulae.	PO2, PO3	PSO2	PEO2	Analyze (High)
Define and analyze geodesics, Christoffel symbols, covariant differentiation, Riemann-Christoffel tensor, and covariant curvature tensor.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Understand (High)
Understand and apply concepts of tensor analysis, including Kronecker delta, contravariant and covariant tensors, and Riemannian space.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Understand (Medium)
M.Sc. Final Mathematics Paper-I: Analysis and Advanced Calculus				

Demonstrate a deep understanding of metric spaces, normed linear spaces, and inner product spaces.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Understand (High)
Apply concepts of completeness, compactness, separability, and connectedness in metric spaces.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (Medium)
Analyze and apply properties of bounded linear transformations, weak convergence, and dual spaces.	PO2, PO3	PSO2	PEO2, PEO4	Analyze (Medium)
Understand and utilize the Hahn-Banach theorem, open mapping theorem, closed graph theorem, and uniform boundedness theorem.	PO2, PO3	PSO2	PEO2, PEO4	Understand (High)
Analyze Hilbert spaces, their properties, and the structure of a Hilbert space.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Analyze (High)
Apply concepts of adjoint operators, self-adjoint operators, projections, and spectral theorem.	PO1, PO4	PSO1, PSO3	PEO1, PEO3	Apply (High)
M.Sc. Final Mathematics Paper-II: Fluid Dynamics				
Understand and apply fundamental concepts of fluid mechanics and equations.	PO1, PO3	PSO1	PEO1, PEO3	Understand (Medium)
Analyze vorticity, circulation, similarity, and non-dimensional parameters.	PO1, PO3	PSO1	PEO1, PEO3	Analyze (Medium)
Solve exact solutions for specific flow patterns.	PO2, PO4	PSO2	PEO2	Apply (Medium)
Analyze specific flow types and apply boundary layer concepts.	PO2, PO4	PSO2	PEO2	Analyze (Medium)
Apply energy equation to analyze temperature distribution.	PO1, PO4	PSO1	PEO1, PEO3	Apply (Medium)
M.Sc. Final Mathematics Paper-III: Mathematical Programming				
Understand and apply fundamental concepts of linear programming and simplex method.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Understand (Medium)
Solve integer programming problems using specific algorithms.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (High)
Analyze and solve nonlinear programming problems using specific conditions and algorithms.	PO2, PO3	PSO2	PEO2, PEO4	Analyze (High)
Apply quadratic programming techniques using specific methods.	PO2, PO3	PSO2	PEO2, PEO4	Apply (Medium)
Solve linear programming problems using dynamic programming.	PO1, PO4	PSO1	PEO1, PEO3	Apply (Medium)
M.Sc. Final Mathematics Paper-IV: Integral Transform and Integral Equations				
Apply Laplace, Fourier, Mellin, and Hankel transforms to solve specific problems.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (Medium)

Solve specific integral equations using various methods.	PO2, PO3	PSO2	PEO2	Apply (Medium)
Understand and apply concepts of convolution theorems, resolvent kernels, and convergence.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Understand (Medium)
Apply concepts to solve specific problems and analyze uniqueness of solutions.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Analyze (Medium)
M.Sc. Final Mathematics Paper-V: Advanced Numerical Analysis				
Apply iterative methods to solve equations and systems.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (Medium)
Solve polynomial equations using specific methods.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (Medium)
Solve systems of linear equations using direct and iterative methods.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (Medium)
Calculate eigenvalues and eigenvectors using specific techniques.	PO2, PO3	PSO2	PEO2	Apply (Medium)
Apply curve fitting and function approximation techniques to solve problems.	PO2, PO3	PSO2	PEO2	Apply (Medium)
Solve ordinary differential equations numerically using specific methods and analyze stability.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (High)
Solve boundary value problems for ordinary differential equations using specific methods.	PO1, PO4	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (High)

B.Sc. Physics Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.Sc. Part-I	Mechanics (I)	1. Grasp Galilean transformations for displacement, velocity, and acceleration between frames.	2. Explain the Coriolis force and its impact on Earth-relative motion.	3. Solve problems involving particle motion under conservative forces using potential energy curves.	4. Calculate the center of mass and study motion of systems with varying mass.	5. Analyze trajectories for different central force scenarios, including elliptical and circular orbits.
B.Sc. Part-I	Electromagnetism (II)	1. Master the concepts of electric and magnetic fields, gradient, divergence, and curl.	2. Solve Laplace's equation in Cartesian coordinates and apply it to various electrostatic problems.	3. Explain the concept of dielectric polarization and its impact on electric fields.	4. Use the Biot-Savart law to calculate the magnetic field due to various current configurations.	5. Apply Maxwell's equations to analyze the propagation and interaction of electromagnetic fields.
B.Sc. Part-I	Optics (III)	1. Explain the concept of coherence and its crucial role in interference.	2. Analyze diffraction phenomena and interpret their characteristic patterns.	3. Grasp the concepts of light polarization and manipulate its properties.	4. Understand the principles of laser operation and explore its diverse applications.	5. Gain basic knowledge of optical fibers and their role in modern communication.
B.Sc. Part-II	Thermodynamics & Statistical Mechanics (I)	1. Understand the principles of phase transitions and heat engines using Clausius-Clapeyron equation and Carnot's cycle.	2. Explain Joule-Thomson expansion and its influence on ideal and non-ideal gases.	3. Master Maxwell's distribution law of molecular velocities and its implications.	4. Distinguish between microscopic and macroscopic states, applying Stirling's formula.	5. Apply Bose-Einstein and Fermi-Dirac distribution laws to various physical phenomena.
B.Sc. Part-II	Mathematical Physics & Special Relativity (II)	1. Apply gradient, divergence, and curl operators in non-Cartesian coordinate systems (circular, cylindrical, spherical).	2. Master Lorentz transformations and comprehend their implications for time dilation and length contraction.	3. Master techniques for solving second-order linear differential equations with variable coefficients and singular points.	4. Applying Laplace and Helmholtz Equations to Physical Systems	5. By exploring these special functions and solutions to differential equations, students gain critical mathematical tools for solving problems in quantum mechanics and understanding wave phenomena.
B.Sc. Part-II	Electronic Circuits & Analog Devices (III)	1. Differentiate and analyze various circuit elements (resistors, capacitors, inductors, etc.).	2. Distinguish between active and passive networks and identify parameters related to their performance.	3. Explain the physics of PN junctions, including charge distribution, drift, and diffusion.	4. Extend your knowledge to Junction Field Effect Transistors (JFETs) and Metal Oxide Semiconductor Field Effect Transistors (MOSFETs), understanding their biasing and operating characteristics.	5. Develop Skills in Digital Logic and Oscillator Design.Implement Boolean logic using basic gates (
B.Sc. Part-III	Quantum Mechanics (I)	1. Bridging the Gap between Classical and Quantum Mechanics.	2. Formulate the general wave equation for matter waves and derive the time-dependent and time-independent Schrödinger equation.	3. Investigate various potential configurations (step, well, barrier) and understand their impact on particle behavior.	4. Formulate the Schrödinger equation in spherical coordinates for the one-electron atom and separate it into radial and angular variables.	5. Qualitatively explain the fine structure of atomic spectra and understand the Frank-Hertz experiment.
B.Sc. Part-III	Nuclear and Particle Physics (II)	1. Demystifying the Nucleus:Analyze Rutherford scattering experiments and understand the basic constituents of the nucleus (mass, size, charge, density).	2. Master the concepts of nuclear fusion and fission, including spontaneous fission and its explanation through the liquid drop model.	3. Gain knowledge of particle accelerators and their types (Van de Graaff, linear accelerator, cyclotron, synchrocyclotron, proton synchrotron, betatron), understanding their mechanisms.	4. Appreciate the discovery of elementary particles and delve into their classification based on quantum numbers.	5. Understand the concepts of the quark model and the "number revolution" related to quarks.
B.Sc. Part-III	Solid State Physics (III)	1. Explore periodicity in lattices, identify unit cells and primitive cells, understand translation vectors, and classify crystals based on crystal systems and packing fractions.	2. Analyze the formation of bands in solids using the periodic potential and Bloch theorem.	3. Explain the phenomenon of thermionic emission and analyze the role of Hall effect in metals.	4. Classify different types of magnetic materials based on their magnetic properties.	5. By grasping the fundamental principles of solid state physics, students will be equipped to understand and develop technologies based on diverse material properties.

B.Sc. Physics Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	PO 1: Apply fundamental principles of physics to analyze and solve problems in various natural phenomena.	PEO 1: Obtain employment or pursue further studies in physics/related fields.	PSO 1: Master advanced theoretical concepts in classical and quantum mechanics, electromagnetism, statistical physics, and solid-state physics.
PO2/PSO2/PEO2	PO 2: Employ mathematical and computational methods to model, analyze, and interpret physical systems.	PEO 2: Demonstrate strong critical thinking, complex problem-solving, and effective communication.	PSO 2: Develop expertise in experimental techniques for investigating physical phenomena in various areas of physics.
PO3/PSO3/PEO3	PO 3: Design and conduct experiments to investigate physical phenomena, collect and analyze data, and draw valid conclusions.	PEO 3: Be valued for ethical conduct and commitment to responsible science use.	PSO 3: Gain proficiency in computational methods for modeling and simulating physical systems.
PO4/PSO4/PEO4	PO 4: Effectively communicate scientific information through written and oral presentations, technical reports, and visual aids.	PEO 4: Contribute to scientific knowledge and development of innovative technologies.	PSO 4: Prepare for further studies in physics or related fields, or for careers in research, development, or teaching.
PO5/PSO5/PEO5	PO 5: Work effectively in teams to solve complex problems and collaborate with professionals from diverse backgrounds.	PEO 5: Be lifelong learners who continuously expand knowledge and skills in physics.	PSO 5: Apply physics knowledge to solve real-world problems and contribute to technological advancements.
PO6/PSO6/PEO6	PO 6: Demonstrate ethical responsibility and awareness of the social and environmental implications of scientific research.		
PO7/PSO7/PEO7	PO 7: Pursue lifelong learning and professional development in the field of physics.		

Mapping of Course Outcomes of all courses of B.Sc. Physics with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
B.Sc. Part-I Paper I: Mechanics				
1. Grasp Galilean transformations for displacement, velocity, and acceleration between frames.	PO1, PO2	PSO1	PEO1, PEO2	Understand (Low)
2. Explain the Coriolis force and its impact on Earth-relative motion.	PO1, PO3	PSO1	PEO1, PEO2	Apply (Medium)
3. Solve problems involving particle motion under conservative forces using potential energy curves.	PO1, PO2	PSO1	PEO1, PEO2	Analyze & Apply (Medium)
4. Calculate the center of mass and study motion of systems with varying mass.	PO1, PO2	PSO1	PEO1, PEO2	Analyze & Evaluate (Medium)
5. Analyze trajectories for different central force scenarios, including elliptical and circular orbits.	PO1, PO2	PSO1	PEO1, PEO2	Analyze & Create (High)
B.Sc. Part-I Paper II: Electromagnetism				
1. Master the concepts of electric and magnetic fields, gradient, divergence, and curl.	PO1, PO2	PSO2	PEO1, PEO2	Understand & Remember (Low)
2. Solve Laplace's equation in Cartesian coordinates and apply it to various electrostatic problems.	PO1, PO2	PSO2	PEO1, PEO2	Analyze & Apply (Medium)
3. Explain the concept of dielectric polarization and its impact on electric fields.	PO1, PO2	PSO2	PEO1, PEO2	Apply & Analyze (Medium)
4. Use the Biot-Savart law to calculate the magnetic field due to various current configurations.	PO1, PO2	PSO2	PEO1, PEO2	Apply & Evaluate (Medium)
5. Apply Maxwell's equations to analyze the propagation and interaction of electromagnetic fields.	PO1, PO2	PSO2	PEO1, PEO2	Analyze & Create (High)
B.Sc. Part-I Paper III: Optics				
1. Explain the concept of coherence and its crucial role in interference.	PO1, PO2	PSO3	PEO1, PEO2	Understand & Remember (Low)
2. Analyze diffraction phenomena and interpret their characteristic patterns.	PO1, PO2	PSO3	PEO1, PEO2	Analyze & Evaluate (Medium)
3. Grasp the concepts of light polarization and manipulate its properties.	PO1, PO2	PSO3	PEO1, PEO2	Analyze & Apply (Medium)
4. Understand the principles of laser operation and explore its diverse applications.	PO1, PO3	PSO3	PEO1, PEO2	Analyze & Evaluate (Medium)
5. Gain basic knowledge of optical fibers and their role in modern communication.	PO1, PO2	PSO3	PEO1, PEO2	Understand & Remember (Low)
B.Sc. Part II Paper I: Thermodynamics & Statistical Mechanics				
1. Understand the principles of phase transitions and heat engines using Clausius-Clapeyron equation and Carnot's cycle.	PO1, PO2	PSO4	PEO1, PEO2	Understand & Remember (Low)
2. Explain Joule-Thomson expansion and its influence on ideal and non-ideal gases.	PO1, PO2	PSO4	PEO1, PEO2	Apply & Evaluate (Medium)
3. Master Maxwell's distribution law of molecular velocities and its implications.	PO1, PO2	PSO4	PEO1, PEO2	Analyze & Evaluate (Medium)
4. Distinguish between microscopic and macroscopic states, applying Stirling's formula.	PO1, PO2	PSO4	PEO1, PEO2	Analyze & Evaluate (Medium)
5. Apply Bose-Einstein and Fermi-Dirac distribution laws to various physical phenomena.	PO1, PO2	PSO4	PEO1, PEO2	Analyze & Create (High)
Paper II: Mathematical Physics & Special Relativity				
1. Apply gradient, divergence, and curl operators in non-Cartesian coordinate systems (circular, cylindrical, spherical).	PO2	PSO5	PEO1, PEO2	Apply & Remember (Medium)
2. Master Lorentz transformations and comprehend their implications for time dilation and length contraction.	PO1, PO2	PSO5	PEO1, PEO2	Analyze & Evaluate (High)
3. Master techniques for solving second-order linear differential equations with variable coefficients and singular points.	PO2	PSO5	PEO1, PEO2	Analyze & Create (High)
4. Applying Laplace and Helmholtz Equations to Physical Systems	PO1, PO2	PSO5	PEO1, PEO2	Analyze & Apply (High)

5. By exploring these special functions and solutions to differential equations, students gain critical mathematical tools for solving problems in quantum mechanics and understanding wave phenomena.	PO1, PO2	PSO5	PEO1, PEO2	Analyze & Create (High)
B.Sc. Part-II Paper III: Electronic Circuits & Analog Devices				
1. Differentiate and analyze various circuit elements (resistors, capacitors, inductors, etc.).	PO1, PO2	PSO6	PEO1, PEO2	Understand & Remember (Low)
2. Distinguish between active and passive networks and identify parameters related to their performance.	PO1, PO2	PSO6	PEO1, PEO2	Analyze & Evaluate (Medium)
3. Explain the physics of PN junctions, including charge distribution, drift, and diffusion.	PO1, PO2	PSO6	PEO1, PEO2	Analyze & Apply (Medium)
4. Extend your knowledge to Junction Field Effect Transistors (JFETs) and Metal Oxide Semiconductor Field Effect Transistors (MOSFETs), understanding their biasing and operating characteristics.	PO1, PO2	PSO6	PEO1, PEO2	Analyze & Evaluate (Medium)
5. Develop Skills in Digital Logic and Oscillator Design.Implement Boolean logic using basic gates (	PO1, PO2	PSO6	PEO1, PEO2	x
B.Sc. Part III Paper I: Quantum Mechanics				
1. Bridging the Gap between Classical and Quantum Mechanics.	PO1, PO2	PSO7	PEO1, PEO2	Understand & Analyze (Medium)
2. Formulate the general wave equation for matter waves and derive the time-dependent and time-independent Schrödinger equation.	PO1, PO2	PSO7	PEO1, PEO2	Analyze & Create (High)
3. Investigate various potential configurations (step, well, barrier) and understand their impact on particle behavior.	PO1, PO2	PSO7	PEO1, PEO2	Analyze & Evaluate (Medium)
4. Formulate the Schrödinger equation in spherical coordinates for the one-electron atom and separate it into radial and angular variables.	PO1, PO2	PSO7	PEO1, PEO2	Analyze & Create (High)
5. Qualitatively explain the fine structure of atomic spectra and understand the Frank-Hertz experiment.				Apply & Evaluate (Medium)
B.Sc. Part III Paper II: Nuclear and Particle Physics				
1. Demystifying the Nucleus:Analyze Rutherford scattering experiments and understand the basic constituents of the nucleus (mass, size, charge, density).	PO1, PO2	PSO8	PEO1, PEO2	Analyze & Evaluate (Medium)
2. Master the concepts of nuclear fusion and fission, including spontaneous fission and its explanation through the liquid drop model.	PO1, PO2	PSO8	PEO1, PEO2	Analyze & Apply (High)
3. Gain knowledge of particle accelerators and their types (Van de Graaff, linear accelerator, cyclotron, synchrocyclotron, proton synchrotron, betatron), understanding their mechanisms.	PO1, PO2	PSO8	PEO1, PEO2	Understand & Remember (Low)
4. Appreciate the discovery of elementary particles and delve into their classification based on quantum numbers.	PO1, PO2	PSO8	PEO1, PEO2	Understand & Remember (Low)
5. Understand the concepts of the quark model and the "number revolution" related to quarks.	PO1, PO2	PSO8	PEO1, PEO2	Analyze & Evaluate (Medium)
B.Sc. Part III Paper III: Solid State Physics				
1. Explore periodicity in lattices, identify unit cells and primitive cells, understand translation vectors, and classify crystals based on crystal systems and packing fractions.	PO1, PO2	PSO9	PEO1, PEO2	Analyze & Evaluate (Medium)
2. Analyze the formation of bands in solids using the periodic potential and Bloch theorem.	PO1, PO2	PSO9	PEO1, PEO2	Analyze & Apply (High)

3. Explain the phenomenon of thermionic emission and analyze the role of Hall effect in metals.	PO1, PO2	PSO9	PEO1, PEO2	Analyze & Evaluate (Medium)
4. Classify different types of magnetic materials based on their magnetic properties.	PO1, PO2	PSO9	PEO1, PEO2	Analyze & Evaluate (Medium)
5. By grasping the fundamental principles of solid state physics, students will be equipped to understand and develop technologies based on diverse material properties.	PO1, PO2	PSO9	PEO1, PEO2	Apply & Create (High)

M.Sc. Physics Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5	Course Outcome 6	Course Outcome 7
M.Sc. Previous	Classical Mechanics and Mathematical Methods in Physics (I)	Utilize Lagrangian and Hamiltonian formalisms to analyze dynamical systems.	Extend Hamilton's principle to nonconservative and nonholonomic systems.	Analyze canonical transformations and integral invariants.	Introduce action-angle variables and analyze their adiabatic invariance.	Master Laplace transforms and apply them to solve differential equations.	Employ tensor algebra in representing physical quantities.	Analyze irreducible representations of finite groups.
M.Sc. Previous	Classical Electrodynamics (II)	Apply methods to solve electrostatic problems involving conducting objects.	Solve boundary value problems in magnetostatics.	Master the multipole expansion technique and analyze energy of charge distributions.	Understand conservation laws and the electromagnetic field tensor.	Analyze plane waves in various media.	Master the Lienard-Wiechert potentials and analyze radiation by accelerated charges.	Understand Cherenkov radiation and scattering phenomena.
M.Sc. Previous	Quantum Mechanics, Atomic and Molecular Physics (III)	Utilize the coordinate representation of operators and interpret time dependence.	Analyze invariance under space and time transformations.	Apply time-independent perturbation theory to various systems.	Delve into systems with identical particles.	Analyze the gross structure energy spectrum of the Hydrogen atom.	Understand relativistic corrections to energy levels and fine structure.	Analyze Alkali spectra and the rotation and vibration band spectrum of molecules.
M.Sc. Previous	Electronics, Numerical Methods, and Computer Programming (IV)	Analyze differential amplifiers and op-amps.	Comprehend the principles and build different types of oscillators.	Construct sequential logic circuits using flip-flops and design counters.	Write Fortran 77 programs using variables, expressions, control structures, etc.	Apply interpolation and numerical methods to solve equations.	Gain basic knowledge of computer architecture, operating systems, etc.	
M.Sc. Final	Advanced Quantum Mechanics and Introductory Quantum Field Theory (V)	Analyze scattering phenomena using differential and total cross sections.	Understand attempts and challenges in formulating a relativistic quantum theory.	Analyze expectation values of coordinates and velocities.	Analyze the classical radiation field and perform Fourier decomposition.	Learn the basics of classical Lagrangian field theory.	Analyze the electromagnetic interaction and gauge invariance, performing covariant quantization.	Apply the S-matrix formalism to analyze scattering phenomena using Feynman diagrams.
M.Sc. Final	Nuclear Physics (VI)	Analyze neutron-proton scattering at low energy.	Explore various experimental techniques for nuclear physics.	Master the principles of the shell model for nuclei.	Study vibrational and collective modes of different types of nuclei.	Analyze absorption and attenuation laws for various phenomena.	Understand the concepts of cross section, partial wave analysis, etc.	Analyze nuclear gamma and beta decay, including electric and magnetic multipole moments, etc.
M.Sc. Final	Statistical and Solid State Physics (VII)	Grasp the concepts of statistical distribution, phase space, density of states, etc.	Utilize partition functions to calculate thermodynamic properties.	Analyze recombination mechanisms, optical transitions, and phenomena like excitons.	Analyze the Fermi-Dirac distribution function and its role.	Investigate different types of magnetism.	Analyze spin waves, their dispersion relation, and experimental determination.	Unravel the mysteries of superconductivity through experimental findings.
M.Sc. Final	Microwave Electronics (VIII)	Choose appropriate waveguide dimensions and excitation methods.	Master various microwave measurement techniques.	Investigate different types of magnetrons and analyze their operating characteristics.	Analyze the avalanche transit time effect and understand the operation of IMPATT and TRAPATT oscillators.	Master the principles of parametric amplification and design parametric amplifiers.	Analyze crucial antenna parameters and fields of different types of antennas.	Explore satellite communication principles, including frequency allocation, orbits, coverage, etc.

M.Sc. Physics Program Summary Sheet:			
S.NO.	Program Outcomes (POs):	Program Specific Outcomes (PSOs):	Program Educational Objectives (PEOs):
PO1/PSO1/PEO1	1. Analyze and solve physical problems using fundamental principles of mechanics, electromagnetism, quantum mechanics, and other relevant physics concepts.	1. Master advanced theoretical concepts in classical and quantum mechanics, electromagnetism, statistical physics, and solid state physics.	1. Graduates will be successful in obtaining employment in physics-related fields or pursuing further studies in physics or related disciplines.
PO2/PSO2/PEO2	2. Apply mathematical and computational methods to model, analyze, and interpret physical phenomena.	2. Develop expertise in experimental techniques for investigating physical phenomena in various areas of physics.	2. Graduates will be recognized for their ability to think critically, solve complex problems, and communicate effectively.
PO3/PSO3/PEO3	3. Design and conduct experiments to investigate physical phenomena, collect and analyze data, and draw valid conclusions.	3. Gain proficiency in computational methods for modeling and simulating physical systems.	3. Graduates will be valued for their ethical conduct and their commitment to the responsible use of scientific knowledge.
PO4/PSO4/PEO4	4. Effectively communicate scientific information using written and oral presentations, technical reports, and visual aids.	4. Prepare for further studies in physics or related fields, or for careers in research, development, or teaching.	4. Graduates will contribute to the advancement of scientific knowledge and the development of innovative technologies.
PO5/PSO5/PEO5	5. Work effectively in teams to solve complex problems and collaborate with professionals from diverse backgrounds.	5. Demonstrate the ability to apply physics knowledge to solve real-world problems and contribute to technological advancements.	5. Graduates will be lifelong learners who continue to expand their knowledge and skills in the field of physics.
PO6/PSO6/PEO6	6. Demonstrate ethical responsibility and awareness of the social and environmental implications of scientific research.		
PO7/PSO7/PEO7	7. Pursue lifelong learning and professional development in the field of physics.		

Mapping of Course Outcomes of all courses of M.Sc. Physics with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
Paper I: Classical Mechanics and Mathematical Methods in Physics				
Utilize Lagrangian and Hamiltonian formalisms to analyze dynamical systems.	PO1, PO2	PSO1	PEO1, PEO2	Apply (Medium)
Extend Hamilton's principle to nonconservative and nonholonomic systems.	PO2	PSO1	PEO1, PEO2	Apply (Medium)
Analyze canonical transformations and integral invariants.	PO2	PSO1	PEO1, PEO2	Analyze (High)
Introduce action-angle variables and analyze their adiabatic invariance.	PO1, PO2	PSO1	PEO1, PEO2	Analyze (High)
Master Laplace transforms and apply them to solve differential equations.	PO2	PSO1	PEO1, PEO2	Apply (Medium)
Employ tensor algebra in representing physical quantities.	PO2	PSO1	PEO1, PEO2	Apply (Medium)
Analyze irreducible representations of finite groups.	PO2	PSO1	PEO1, PEO2	Analyze (High)
Classical Electrodynamics				
Apply methods to solve electrostatic problems involving conducting objects.	PO1, PO2	PSO2	PEO1, PEO2	Apply (Medium)
Solve boundary value problems in magnetostatics.	PO2	PSO2	PEO1, PEO2	Apply (Medium)
Master the multipole expansion technique and analyze energy of charge distributions.	PO2	PSO2	PEO1, PEO2	Analyze (Medium)
Understand conservation laws and the electromagnetic field tensor.	PO1, PO2	PSO2	PEO1, PEO2	Understand (Medium)
Analyze plane waves in various media.	PO1, PO2	PSO2	PEO1, PEO2	Analyze (Medium)
Master the Lienard-Wiechert potentials and analyze radiation by accelerated charges.	PO1, PO2	PSO2	PEO1, PEO2	Apply (High)
Understand Cherenkov radiation and scattering phenomena.	PO1, PO2	PSO2	PEO1, PEO2	Understand (Medium)
Quantum Mechanics, Atomic and Molecular Physics				
Utilize the coordinate representation of operators and interpret time dependence.	PO1, PO2	PSO3	PEO1, PEO2	Apply (Medium)
Analyze invariance under space and time transformations.	PO1, PO2	PSO3	PEO1, PEO2	Analyze (Medium)
Apply time-independent perturbation theory to various systems.	PO2	PSO3	PEO1, PEO2	Apply (High)
Delve into systems with identical particles.	PO1, PO2	PSO3	PEO1, PEO2	Analyze (High)
Analyze the gross structure energy spectrum of the Hydrogen atom.	PO1, PO2	PSO3	PEO1, PEO2	Analyze (High)
Understand relativistic corrections to energy levels and fine structure.	PO1, PO2	PSO3	PEO1, PEO2	Analyze (High)
Analyze Alkali spectra and the rotation and vibration band spectrum of molecules.	PO1, PO2	PSO3	PEO1, PEO2	Analyze (High)
Electronics, Numerical Methods, and Computer Programming				
Analyze differential amplifiers and op-amps.	PO1, PO2	PSO4	PEO1, PEO2	Analyze (Medium)
Comprehend the principles and build different types of oscillators.	PO1, PO2	PSO4	PEO1, PEO2	Understand (Medium)
Construct sequential logic circuits using flip-flops and design counters.	PO1, PO2	PSO4	PEO1, PEO2	Apply (Medium)
Write Fortran 77 programs using variables, expressions, control structures, etc.	PO2	PSO4	PEO1, PEO2	Apply (Medium)
Apply interpolation and numerical methods to solve equations.	PO2	PSO4	PEO1, PEO2	Apply (High)
Gain basic knowledge of computer architecture, operating systems, etc.	PO2	PSO4	PEO1, PEO2	Apply (High)
	PO2	PSO4	PEO1, PEO2	Understand (Medium)

Advanced Quantum Mechanics and Introductory Quantum Field Theory				
Analyze scattering phenomena using differential and total cross sections.	PO1, PO2	PSO5	PEO1, PEO2	Analyze (High)
Understand attempts and challenges in formulating a relativistic quantum theory.	PO2	PSO5	PEO1, PEO2	Understand (High)
Analyze expectation values of coordinates and velocities.	PO1, PO2	PSO5	PEO1, PEO2	Analyze (High)
Analyze the classical radiation field and perform Fourier decomposition.	PO1, PO2	PSO5	PEO1, PEO2	Analyze (High)
Learn the basics of classical Lagrangian field theory.	PO2	PSO5	PEO1, PEO2	Understand (Medium)
Analyze the electromagnetic interaction and gauge invariance, performing covariant quantization.	PO1, PO2	PSO5	PEO1, PEO2	Analyze (High)
Apply the S-matrix formalism to analyze scattering phenomena using Feynman diagrams.	PO1, PO2	PSO5	PEO1, PEO2	Analyze (High)
Nuclear Physics				
Analyze neutron-proton scattering at low energy.	PO1, PO2	PSO6	PEO1, PEO2	Analyze (Medium)
Explore various experimental techniques for nuclear physics.	PO2	PSO6	PEO1, PEO2	Understand (Medium)
Master the principles of the shell model for nuclei.	PO1, PO2	PSO6	PEO1, PEO2	Understand (Medium)
Study vibrational and collective modes of different types of nuclei.	PO1, PO2	PSO6	PEO1, PEO2	Analyze (Medium)
Analyze absorption and attenuation laws for various phenomena.	PO1, PO2	PSO6	PEO1, PEO2	Analyze (Medium)
Understand the concepts of cross section, partial wave analysis, etc.	PO1, PO2	PSO6	PEO1, PEO2	Understand (Medium)
Analyze nuclear gamma and beta decay, including electric and magnetic multipole moments, etc.	PO1, PO2	PSO6	PEO1, PEO2	Analyze (Medium)
Statistical and Solid State Physics				
Grasp the concepts of statistical distribution, phase space, density of states, etc.	PO1, PO2	PSO7	PEO1, PEO2	Understand (Medium)
Utilize partition functions to calculate thermodynamic properties.	PO1, PO2	PSO7	PEO1, PEO2	Apply (Medium)
Analyze recombination mechanisms, optical transitions, and phenomena like excitons.	PO1, PO2	PSO7	PEO1, PEO2	Analyze (Medium)
Analyze the Fermi-Dirac distribution function and its role.	PO1, PO2	PSO7	PEO1, PEO2	Analyze (Medium)
Investigate different types of magnetism.	PO1, PO2	PSO7	PEO1, PEO2	Understand (Medium)
Analyze spin waves, their dispersion relation, and experimental determination.	PO1, PO2	PSO7	PEO1, PEO2	Analyze (Medium)
Unravel the mysteries of superconductivity through experimental findings.	PO1, PO2	PSO7	PEO1, PEO2	Analyze (Medium)
Microwave Electronics				
Choose appropriate waveguide dimensions and excitation methods.	PO1, PO2	PSO8	PEO1, PEO2	Apply (Medium)
Master various microwave measurement techniques.	PO2	PSO8	PEO1, PEO2	Apply (High)
Investigate different types of magnetrons and analyze their operating characteristics.	PO1, PO2	PSO8	PEO1, PEO2	Analyze (Medium)
Analyze the avalanche transit time effect and understand the operation of IMPATT and TRAPATT oscillators.	PO1, PO2	PSO8	PEO1, PEO2	Analyze (High)
Master the principles of parametric amplification and design parametric amplifiers.	PO1, PO2	PSO8	PEO1, PEO2	Apply (High)
Analyze crucial antenna parameters and fields of different types of antennas.	PO1, PO2	PSO8	PEO1, PEO2	Analyze (High)

Explore satellite communication principles, including frequency allocation, orbits, coverage, etc.	PO2	PSO8	PEO1, PEO2	Analyze (High)

B.Sc. Botany Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.Sc. Part-I	Cell Biology, Genetics and Plant Breeding	Explain the mechanisms of cell division, including mitosis and meiosis, with detailed knowledge of their stages and key events.	Analyze the basis of genetic material through experiments and differentiate between nuclear and extra-nuclear genomes.	Understand the principles of genetic inheritance, including Mendel's laws and their exceptions.	Apply the principles of plant breeding to self-pollinated, cross-pollinated, and vegetatively propagated crop plants.	Recognize the contributions of famous plant breeders and identify major agricultural research institutes.
B.Sc. Part-I	Paper 2: Microbiology, Mycology & Plant Pathology	Master the fundamentals of microbiology and microbial interactions.	Become an expert in fungi and plant disease recognition.	Combat fungal diseases with in-depth knowledge.	Unravel the mysteries of rusts, smuts, and blights.	Apply theoretical knowledge to real-world scenarios.
B.Sc. Part-I	Paper 3: Algae, Bryophytes and Lichens	Mastering the fundamentals of algae and bryophytes.	Delving into specific algae types.	Understanding the complexities of bryophyte life cycles.	Appreciating the economic value of bryophytes.	Conducting close-up examinations of representative bryophytes.
B.Sc. Part-II	Paper 1: Molecular Biology and Biotechnology	Master the Fundamentals of Nucleic Acids and DNA Structure	Unravel the Mysteries of Gene Expression	Embrace the World of Plant Tissue Culture	Become Adept at Recombinant DNA Technology	Apply Molecular Technologies to Real-World Solutions
B.Sc. Part-II	Paper 2: Plant Physiology and Biochemistry	Master the Fundamentals of Plant Water Relations	Analyze Mechanisms of Sap Ascent and Transpiration	Unravel the Secrets of Plant Energy Production	Explore the Building Blocks of Plant Life: Organic Molecules and Metabolism	Comprehend the Concept of Enzymes and Metabolic Processes
B.Sc. Part-II	Paper 3: Pteridophytes, Gymnosperms, and Palaeobotany	Master the Fundamentals of Pteridophytes	Delve into the Reproductive Mechanisms of Pteridophytes	Dive Deep into the World of Specific Pteridophytes	Unravel the Secrets of Gymnosperms	Travel Through Time with Palaeobotany
B.Sc. Part-III	Paper 1: Plant Morphology and Anatomy	Master the Plant Body Plan and Diversity	Delving into the Shoot System	Unraveling the Mysteries of the Leaf and Root	Understanding the Seed: Structure, Function, and Beyond	Developing Practical Skills in Plant Identification and Analysis
B.Sc. Part-III	Paper 2: Ecology and Economic Botany	Mastering Plant-Environment Interactions	Demystifying the Influence of Light and Soil	Understanding Community Dynamics and Ecological Succession	Navigating the World of Ecosystems	Exploring the Treasure Trove of Economic Botany
B.Sc. Part-III	Part-III, Paper 3: Angiosperm Taxonomy and Embryology	Mastering Taxonomic Principles and Practices	Demystifying the Diversity of Angiosperms	Unraveling the Mysteries of Flower Development and Reproduction	Exploring the Intricacies of Pollination and Fertilization	Navigating the World of Embryo Development and Apomixis

B.Sc. Botany Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	● PO1: Apply the principles of botany to solve real-world problems in agriculture, environmental science, and related fields.	● PSO1: Develop a comprehensive understanding of plant morphology, physiology, anatomy, genetics, and ecology.	● PEO1: Pursue careers in research, teaching, or industry related to botany, agriculture, environmental science, or biotechnology.
PO2/PSO2/PEO2	● PO2: Conduct scientific research and experiments in botany, analyze data, and draw meaningful conclusions.	● PSO2: Master the fundamental principles and techniques of plant breeding, tissue culture, and genetic engineering.	● PEO2: Prepare for postgraduate studies in botany or related fields.
PO3/PSO3/PEO3	● PO3: Communicate effectively about botanical concepts and research findings to both scientific and non-scientific audiences.	● PSO3: Identify and analyze plant diseases and implement effective control measures.	● PEO3: Adapt to changing technologies and advancements in the field of botany through continuous learning and professional development.
PO4/PSO4/PEO4	● PO4: Foster a critical and analytical mindset for continuous learning and development in the field of botany.	● PSO4: Recognize and appreciate the economic and ecological significance of various plant groups.	● PEO4: Advocate for the conservation of plant biodiversity and promote sustainable practices in agriculture and environmental management.
PO5/PSO5/PEO5	● PO5: Exhibit ethical and professional conduct in research and practice, adhering to scientific principles and environmental sustainability.	● PSO5: Understand the historical and contemporary advancements in botanical research and apply them to address global challenges.	● PEO5: Contribute to the development of a more informed and environmentally conscious society through knowledge and understanding of plant life.

Mapping of Course Outcomes of all courses of B.Sc. Botany with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific	Program Educational	Level
B.Sc. Part-I, Paper 1: Cell Biology, Genetics and Plant Breeding				
Explain the mechanisms	PO1	PSO1	PEO1	Understand, Apply
Analyze the basis of	PO2	PSO2	PEO2	Analyze, Evaluate
Understand the principles	PO1	PSO1	PEO1	Understand, Analyze
Apply the principles of	PO5	PSO3	PEO3	Apply, Analyze (Hard)
Recognize the	PO1	PSO1	PEO1	Remember, Understand
B.Sc. Part-I, Paper 2: Microbiology, Mycology & Plant Pathology				
Master the fundamentals	PO1	PSO1	PEO1	Understand, Analyze
Become an expert in fungi	PO2	PSO3	PEO2	Apply, Analyze (Hard)
Combat fungal diseases	PO4	PSO2	PEO1	Understand, Apply
Unravel the mysteries of	PO5	PSO3	PEO3	Analyze, Evaluate (Hard)
Apply theoretical	PO3	PSO1	PEO1	Apply, Evaluate (Hard)
B.Sc. Part-I, Paper 3: Algae, Bryophytes and Lichens				
Mastering the	PO2	PSO3	PEO1	Understand, Remember
Delving into specific algae	PO1	PSO2	PEO3	Understand, Analyze
Understanding the	PO5	PSO3	PEO1	Understand, Analyze
Appreciating the	PO3	PSO1	PEO1	Remember, Understand
Conducting close-up	PO4	PSO1	PEO2	Apply, Analyze (Medium)
B.Sc. Part-II, Paper 1: Molecular Biology and Biotechnology				
Master the Fundamentals	PO2	PSO1	PEO1, PEO2	Understand, Analyze
Unravel the Mysteries of	PO1	PSO1	PEO1, PEO5	Understand, Analyze
Embrace the World of	PO3	PSO4	PEO3, PEO5	Understand, Apply
Become Adept at	PO2	PSO1	PEO1, PEO2	Understand, Apply (Hard)
Apply Molecular	PO3	PSO4	PEO3, PEO5	Apply, Evaluate (Hard)
B.Sc. Part-II, Paper 2: Plant Physiology and Biochemistry				
Master the Fundamentals	PO1	PSO3	PEO1, PEO2	Understand, Remember
Analyze Mechanisms of	PO3	PSO1	PEO1, PEO2	Understand, Analyze
Unravel the Secrets of	PO2	PSO4	PEO1, PEO5	Understand, Analyze
Explore the Building	PO3	PSO1	PEO3, PEO5	Understand, Remember
Comprehend the Concept	PO2	PSO1	PEO1, PEO2	Understand, Analyze
B.Sc. Part-II, Paper 3: Pteridophytes, Gymnosperms, and Palaeobotany				
Master the Fundamentals	PO3	PSO3	PEO3, PEO5	Understand, Remember
Delve into the	PO2	PSO3	PEO1, PEO2	Understand, Analyze
Dive Deep into the World	PO4	PSO4	PEO1, PEO2	Understand, Analyze
Unravel the Secrets of	PO5	PSO4	PEO1, PEO5	Understand, Analyze
Travel Through Time with	PO2	PSO1	PEO1, PEO5	Understand, Remember
B.Sc. Part-III, Paper 1: Plant Morphology and Anatomy				
Master the Plant Body	PO1	PSO4	PEO1, PEO3	Understand, Analyze
Delving into the Shoot	PO2	PSO1	PEO1, PEO2	Understand, Analyze
Unraveling the Mysteries	PO5	PSO3	PEO3, PEO5	Understand, Analyze
Understanding the Seed:	PO1	PSO4	PEO1, PEO3	Understand, Analyze
Developing Practical	PO2	PSO1	PEO1, PEO2	Apply, Evaluate (Hard)
B.Sc. Part-III, Paper 2: Ecology and Economic Botany				
Mastering	PO5	PSO3	PEO1, PEO2	Understand, Analyze
Demystifying the	PO5	PSO3	PEO1, PEO2	Understand, Analyze
Understanding	PO5	PSO4	PEO1, PEO2	Understand, Analyze
Navigating the World of	PO1	PSO4	PEO1, PEO5	Understand, Analyze
Exploring the Treasure	PO1	PSO2	PEO1, PEO5	Understand, Analyze
B.Sc. Part-III, Paper 3: Angiosperm Taxonomy and Embryology				
Mastering Taxonomic	PO3	PSO1	PEO1, PEO5	Understand, Analyze
Demystifying the	PO3	PSO1	PEO1, PEO5	Understand, Analyze
Unraveling the Mysteries	PO2	PSO3	PEO1, PEO2	Understand, Analyze
Exploring the Intricacies	PO5	PSO4	PEO1, PEO3	Understand, Analyze
Navigating the World of	PO5	PSO4	PEO1, PEO3	Understand, Analyze

M.Sc. Botany Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5	Course Outcome 6	Course Outcome 7
M.Sc. Previous (Botany)	Paper 1: Cell and Molecular Biology of Plants:	Master the Fundamentals of Plant Cell Structure and Function	Unravel the Secrets of Chloroplast and Mitochondrial Biology	Navigate the World of Gene Expression and Regulation	Demystify Protein Synthesis and Targeting	Understand the Dynamics of Cell Shape and Motility	Gain Insights into Cell Cycle Control and Death	Become Adept in Advanced Cellular Imaging Techniques
M.Sc. Previous (Botany)	Paper 2: Cytology, Genetics, and Cytogenetics:	Demystifying Chromatin Organization and Karyotypes	Delving into the Genetics of Organelles	Understanding Gene Structure and Expression	Navigating the World of Mutations and Repair	Exploring Sex Determination and Aneuploidy	Embracing Molecular Cytogenetics Techniques	Understanding Alien Gene Transfer and Chromosome Manipulation
M.Sc. Previous (Botany)	Paper 3: Biology and Diversity of Lower Plants:	Master the World of Algae	Demystifying the Kingdom of Fungi	Unveiling the Secrets of Bryophytes	Navigating the World of Pteridophytes	Develop Analytical Skills in Identifying and Classifying Lower Plants	Appreciate the Ecological and Economic Significance of Lower Plants	Gain Expertise in Research Techniques
M.Sc. Previous (Botany)	Paper 4: Taxonomy and Diversity of Seed Plants:	Demystifying the World of Gymnosperms	Navigating the Complexities of Evolution and Species Delimitation	Mastering the Art of Taxonomic Categorization and Nomenclature	Understanding the Evolution and Importance of Angiosperm Classification Systems	Appreciating the Biogeographical Distribution of Plants	Developing Critical Thinking and Analytical Skills	Building Expertise in Research and Communication
M.Sc. Previous (Botany)	Paper 5: Plant Physiology and Biochemistry:	Master the Interplay of Water Relations and Membrane Transport	Demystify the Secrets of Photosynthesis	Navigate the Complexities of Cellular Respiration and Metabolism	Understand the Orchestration of Plant Growth by Hormones	Decode the Mysteries of Flowering and Plant Responses to Environmental Cues	Develop Robust Analytical and Problem-Solving Skills	Gain Hands-on Experience with Biochemical Techniques
M.Sc. Previous (Botany)	Paper 6: Microbiology and Plant Pathology:	Master the Diversity and Significance of Microbes	Demystify the World of Viruses and Viral Diseases	Appreciate the Scope and Applications of Microbiology	Unravel the Mysteries of Immunity and Antibody Engineering	Explore the Frontiers of Bio-Technology and Plant Pathology	Master the Principles and Practices of Plant Disease Management	Gain Practical Skills in Identifying and Controlling Plant Diseases
M.Sc. Final (Botany)	Paper 7: Plant Morphology, Anatomy, Developmental and Reproductive Biology:	Demystifying the Uniqueness of Plant Development	Mastering Seed Germination and Early Plant Establishment	Deciphering the Mysteries of Leaf and Root Formation	Unveiling the Wonders of Plant Reproduction	Mastering the Male and Female Gametophyte	Understanding the Intricacies of Pollination and Fertilization	Expanding Your Practical Skills and Analytical Abilities
M.Sc. Final (Botany)	Paper 8: Plant Ecology:	Master the Foundation of Ecological Concepts	Analyze Population Dynamics and Community Structure	Explain the Mechanisms of Vegetation Development	Comprehend the Structure and Function of Ecosystems	Evaluate Ecosystem Stability and Resilience	Explore the Interplay of Biomes, Biodiversity, and Climate Change	Develop Practical Skills and Critical Thinking
M.Sc. Final (Botany)	Paper 9: Plant Resource Utilization and Conservation:	Mastering the Value of Plant Biodiversity	Understanding Sustainable Development	Appreciating the Diversity and Uses of Cultivated Plants	Exploring Timber, Fuel, and Non-Timber Forest Products	Evaluating the Green Revolution and Future Food Security	Recognizing the Role of Plants in Urban Environments	Developing Conservation Strategies and Awareness
M.Sc. Final (Botany)	Paper 10: Plant Biotechnology and Genetic Engineering of Plants and Microbes:	Master the Core Concepts of Biotechnology	Navigate the World of Plant Cell and Tissue Culture	Explore the Potential of Somatic Hybridization	Unveil the Diverse Applications of Plant Tissue Culture	Demystify Recombinant DNA Technology	Engineer Plants for Improved Traits	Explore the Frontiers of Microbial Genetic Manipulation and Genomics
M.Sc. Final (Botany)	Paper 11: Biotechnology-I:	Master the Power of Totipotency and Plant Tissue Culture Techniques	Navigate the Plant Tissue Culture Laboratory	Explore Diverse Pathways of Plant Regeneration	Delve into the Intricacies of Somatic Embryo-genesis	Unleash the Power of Pollen Embryogenesis	Master the Techniques of Protoplast Isolation and Culture	Appreciate the Practical Applications of Plant Tissue Culture
M.Sc. Final (Botany)	Paper 12: Biotechnology-II:	Master the Concepts and History of Transgenic Plants	Demystify Agrobacterium-mediated Transformation	Explore Alternative DNA Transfer Methods	Master the Tools of Genetic Transformation	Navigate the Regulation of Gene Expression	Unleash the Power of Transgenic Crops	Explore the Production of Valuable Products

M.Sc. Botany Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	PO1. Demonstrate strong knowledge of plant biology, encompassing cell structure and function, plant genetics, plant physiology, plant development, taxonomy, diversity, ecology, resource utilization, conservation, and biotechnology.	PSO1. Apply advanced knowledge of plant cell and molecular biology to research and practical applications.	PEO1. Contribute to the advancement of knowledge and innovation in plant biology through research and development.
PO2/PSO2/PEO2	PO2. Analyze and interpret data related to plant biology effectively.	PSO2. Apply advanced knowledge of plant genetics and cytogenetics to research and breeding programs.	PEO2. Contribute to sustainable agriculture and environmental conservation through the application of plant biological knowledge.
PO3/PSO3/PEO3	PO3. Communicate plant biology knowledge effectively both verbally and in writing.	PSO3. Evaluate ecological interconnectedness of life on earth and its implications for plant biology.	PEO3. Address the socio-economic challenges related to plant sciences.
PO4/PSO4/PEO4	PO4. Work effectively in teams and independently on plant-based projects.	PSO4. Integrate knowledge of botany for global sustainable development.	PEO4. Take up and shape successful careers in diverse fields of botany.
PO5	PO5. Apply knowledge of plant biology to solve real-world problems in agriculture, conservation, and biotechnology.		
PO6	PO6. Design and conduct research experiments in various fields of plant biology.		
PO7	PO7. Use modern botanical techniques and advanced equipment for plant research and analysis.		

Mapping of Course Outcomes of all courses of M.Sc. Botany with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific	Program Educational	Level
M.Sc. Previous (Botany) Paper 1: Cell and Molecular Biology of Plants:				
Master the Fundamentals of Plant Cell Structure and Function	PO1	PSO1	PEO1, PEO4	Understand, Medium
Unravel the Secrets of Chloroplast and Mitochondrial Biology	PO1	PSO1	PEO1, PEO4	Understand, Hard
Navigate the World of Gene Expression and Regulation	PO1, PO2	PSO1	PEO1, PEO4	Understand, Hard
Demystify Protein Synthesis and Targeting	PO1	PSO1	PEO1, PEO4	Understand, Hard
Understand the Dynamics of Cell Shape and Motility	PO1	PSO1	PEO1, PEO4	Understand, Hard
Gain Insights into Cell Cycle Control and Death	PO1	PSO1	PEO1, PEO4	Understand, Hard
Become Adept in Advanced Cellular Imaging Techniques	PO7	PSO1	PEO1, PEO4	Apply, Hard
M.Sc. Previous (Botany) Paper 2: Cytology, Genetics, and Cytogenetics:				
Demystifying Chromatin Organization and Karyotypes	PO1	PSO2	PEO1, PEO4	Understand, Medium
Delving into the Genetics of Organelles	PO1	PSO2	PEO1, PEO4	Understand, Hard
Understanding Gene Structure and Expression	PO1, PO2	PSO2	PEO1, PEO4	Understand, Medium
Navigating the World of Mutations and Repair	PO1	PSO2	PEO1, PEO4	Understand, Medium
Exploring Sex Determination and Aneuploidy	PO1	PSO2	PEO1, PEO4	Understand, Medium
Embracing Molecular Cytogenetics Techniques	PO7	PSO2	PEO1, PEO4	Apply, Hard
Understanding Alien Gene Transfer and Chromosome Manipulation	PO1	PSO2	PEO1, PEO4	Understand, Hard
M.Sc. Previous (Botany) Paper 3: Biology and Diversity of Lower Plants:				
Master the World of Algae	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Demystifying the Kingdom of Fungi	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Unveiling the Secrets of Bryophytes	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Navigating the World of Pteridophytes	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Develop Analytical Skills in Identifying and Classifying Lower Plants	PO2, PO3	PSO3	PEO2, PEO4	Apply, Medium
Appreciate the Ecological and Economic Significance of Lower Plants	PO3, PO5	PSO3	PEO2, PEO4	Understand, Easy
Gain Expertise in Research Techniques				Apply, Hard
M.Sc. Previous (Botany) Paper 4: Taxonomy and Diversity of Seed Plants:				

Demystifying the World of Gymnosperms	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Navigating the Complexities of Evolution and Species Delimitation	PO1, PO2	PSO3	PEO1, PEO4	Understand, Hard
Mastering the Art of Taxonomic Categorization and Nomenclature	PO3, PO5	PSO3	PEO2, PEO4	Apply, Medium
Understanding the Evolution and Importance of Angiosperm Classification Systems	PO1, PO3	PSO3	PEO1, PEO4	Understand, Medium
Appreciating the Biogeographical Distribution of Plants	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Developing Critical Thinking and Analytical Skills	PO2, PO4	PSO3	PEO1, PEO4	Apply, Hard
Building Expertise in Research and Communication	PO6, PO3	PSO3	PEO1, PEO4	Apply, Hard
M.Sc. Previous (Botany) Paper 5: Plant Physiology and Biochemistry:				
Master the Interplay of Water Relations and Membrane Transport	PO1, PO2	PSO3	PEO2, PEO4	Understand, Hard
Demystify the Secrets of Photosynthesis	PO1, PO2	PSO3	PEO2, PEO4	Understand, Hard
Navigate the Complexities of Cellular Respiration and Metabolism	PO1, PO2	PSO3	PEO2, PEO4	Understand, Hard
Understand the Orchestration of Plant Growth by Hormones	PO1, PO2	PSO3	PEO2, PEO4	Understand, Medium
Decode the Mysteries of Flowering and Plant Responses to Environmental Cues	PO1, PO2	PSO3	PEO2, PEO4	Understand, Medium
Develop Robust Analytical and Problem-Solving Skills	PO2, PO4	PSO3	PEO1, PEO4	Apply, Hard
Gain Hands-on Experience with Biochemical Techniques	PO7	PSO3	PEO1, PEO4	Apply, Hard
M.Sc. Previous (Botany) Paper 6: Microbiology and Plant Pathology:				
Master the Diversity and Significance of Microbes	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Demystify the World of Viruses and Viral Diseases	PO1, PO2	PSO3	PEO2, PEO4	Understand, Medium
Appreciate the Scope and Applications of Microbiology	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Unravel the Mysteries of Immunity and Antibody Engineering	PO1, PO2	PSO3	PEO1, PEO4	Understand, Hard
Explore the Frontiers of Bio-Technology and Plant Pathology	PO1, PO2	PSO3	PEO1, PEO4	Understand, Medium
Master the Principles and Practices of Plant Disease Management	PO1, PO5	PSO3	PEO2, PEO4	Apply, Hard

Gain Practical Skills in Identifying and Controlling Plant Diseases				Apply, Hard
M.Sc. Final (Botany) Paper 7: Plant Morphology, Anatomy, Developmental and Reproductive Biology:				
Demystifying the Uniqueness of Plant Development	PO1	PSO1	PEO1, PEO4	Understand, Medium
Mastering Seed Germination and Early Plant Establishment	PO1	PSO1	PEO2, PEO4	Understand, Medium
Deciphering the Mysteries of Leaf and Root Formation	PO1, PO2	PSO1	PEO2, PEO4	Understand, Medium
Unveiling the Wonders of Plant Reproduction	PO1, PO2	PSO1	PEO1, PEO4	Understand, Medium
Mastering the Male and Female Gametophyte	PO1, PO2	PSO1	PEO1, PEO4	Understand, Medium
Understanding the Intricacies of Pollination and Fertilization	PO1, PO2	PSO1	PEO1, PEO4	Understand, Medium
Expanding Your Practical Skills and Analytical Abilities	PO6, PO2	PSO1	PEO1, PEO4	Apply, Hard
M.Sc. Final (Botany) Paper 8: Plant Ecology:				
Master the Foundation of Ecological Concepts	PO1	PSO3	PEO1, PEO4	Understand, Medium
Analyze Population Dynamics and Community Structure	PO1, PO2	PSO3	PEO2, PEO4	Analyze, Hard
Explain the Mechanisms of Vegetation Development	PO1, PO2	PSO3	PEO2, PEO4	Understand, Hard
Comprehend the Structure and Function of Ecosystems	PO1, PO2	PSO3	PEO2, PEO4	Understand, Medium
Evaluate Ecosystem Stability and Resilience	PO1, PO2	PSO3	PEO2, PEO4	Analyze, Hard
Explore the Interplay of Biomes, Biodiversity, and Climate Change	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Develop Practical Skills and Critical Thinking	PO6, PO2	PSO3	PEO1, PEO4	Apply, Hard
M.Sc. Final (Botany) Paper 9: Plant Resource Utilization and Conservation:				
Mastering the Value of Plant Biodiversity	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Understanding Sustainable Development	PO3, PO5	PSO3	PEO2, PEO4	Understand, Medium
Appreciating the Diversity and Uses of Cultivated Plants	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Exploring Timber, Fuel, and Non-Timber Forest Products	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium
Evaluating the Green Revolution and Future Food Security	PO2, PO3	PSO3	PEO2, PEO4	Analyze, Hard
Recognizing the Role of Plants in Urban Environments	PO1, PO3	PSO3	PEO2, PEO4	Understand, Medium

Developing Conservation Strategies and Awareness	PO1, PO2	PSO3	PEO1, PEO4	Analyze, Hard
M.Sc. Final (Botany) Paper 10: Plant Biotechnology and Genetic Engineering of Plants and Microbes:				
Master the Core Concepts of Biotechnology	PO1, PO3	PSO3, PSO4	PEO1, PEO4	Understand, Medium
Navigate the World of Plant Cell and Tissue Culture	PO1, PO6	PSO3	PEO1, PEO4	Understand, Medium
Explore the Potential of Somatic Hybridization	PO1, PO2	PSO3	PEO1, PEO4	Analyze, Hard
Unveil the Diverse Applications of Plant Tissue Culture	PO3, PO5	PSO3	PEO2, PEO4	Understand, Medium
Demystify Recombinant DNA Technology	PO1, PO2	PSO3	PEO1, PEO4	Understand, Hard
Engineer Plants for Improved Traits	PO1, PO3	PSO4	PEO1, PEO4	Analyze, Hard
Explore the Frontiers of Microbial Genetic Manipulation and Genomics	PO1, PO3	PSO3	PEO1, PEO4	Understand, Hard
M.Sc. Final (Botany) Paper 11: Biotechnology-I:				
Master the Power of Totipotency and Plant Tissue Culture Techniques	PO1, PO2	PSO3	PEO1, PEO4	Understand, Hard
Navigate the Plant Tissue Culture Laboratory	PO6, PO7	PSO3	PEO1, PEO4	Apply, Hard
Explore Diverse Pathways of Plant Regeneration	PO1, PO2	PSO3	PEO1, PEO4	Understand, Medium
Delve into the Intricacies of Somatic Embryo-genesis	PO1, PO2	PSO3	PEO1, PEO4	Understand, Hard
Unleash the Power of Pollen Embryogenesis	PO1, PO2	PSO3	PEO1, PEO4	Understand, Medium
Master the Techniques of Protoplast Isolation and Culture	PO6, PO7	PSO3	PEO1, PEO4	Apply, Hard
Appreciate the Practical Applications of Plant Tissue Culture	PO3, PO5	PSO3	PEO2, PEO4	Understand, Medium
M.Sc. Final (Botany) Paper 12: Biotechnology-II:				
Master the Concepts and History of Transgenic Plants	PO1, PO3	PSO4	PEO1, PEO4	Understand, Medium
Demystify Agrobacterium-mediated Transformation	PO1, PO6	PSO3	PEO1, PEO4	Understand, Hard
Explore Alternative DNA Transfer Methods	PO1, PO2	PSO3	PEO1, PEO4	Understand, Medium
Master the Tools of Genetic Transformation	PO1, PO2	PSO3	PEO1, PEO4	Understand, Hard
Navigate the Regulation of Gene Expression	PO1, PO2	PSO3	PEO1, PEO4	Understand, Hard
Unleash the Power of Transgenic Crops	PO1, PO3	PSO4	PEO1, PEO4	Understand, Medium
Explore the Production of Valuable Products	PO1, PO2	PSO3	PEO1, PEO4	Understand, Medium

Course Outcomes of All Courses of B.Sc. Zoology						
Course Code	**Course Title**	**Course Outcome1**	**Course Outcome2**	**Course Outcome3**	**Course Outcome4**	**Course Outcome5**
BSC I Z1	**Zoology - I**	Students will be able to understand the basic principles of taxonomy, including the concept of five kingdom schemes, the international code of nomenclature, cladistics, and molecular taxonomy.	Students will be able to understand the concept of protozoa and metazoa, as well as the different levels of organization within these groups.	Students will be able to classify non-chordata and chordata based on characteristics such as symmetry, coelom, segmentation, and embryogeny.	Students will be able to identify and classify specific examples of protozoa, such as Amoeba, Entamoeba, Paramaecium, Euglena, Plasmodium, Trypanosoma, and Leishmania.	Students will be able to identify and classify specific examples of non-chordata, such as Leucosolenia, Sycon, Obelia, Aurelia, Beroe, Fasciola hepatica, and Taenia solium.
BSC I Z2	**Zoology - II**	Students will be able to describe the structure and function of the major components of a eukaryotic animal cell, including the cell membrane, cytoplasm, nucleus, and organelles.	Students will be able to explain the different mechanisms of cell membrane transport, including passive diffusion, facilitated diffusion, and active transport.	Students will be able to compare and contrast the structure and function of prokaryotic and eukaryotic cells.	Students will be able to identify the different types of cell division and explain the importance of each type for cell growth and reproduction.	Students will be able to apply their knowledge of cell biology to understand the basic principles of human physiology and disease.
BSC I Z3	**Zoology - III**	Students will be able to explain the historical development of the field of embryology and describe the different types and scopes of embryology.	Students will be able to compare and contrast the processes of gametogenesis in males and females, including the formation of ova, sperm, and the process of vitellogenesis.	Students will be able to describe the process of fertilization, including the activation of the ovum and the changes that occur in the organization of the egg cytoplasm.	Students will be able to explain the processes of cleavage, blastulation, and gastrulation, and how these processes establish the basic body plan of an animal.	Students will be able to describe the development of a chick embryo up to 96 hours, including the formation of extra embryonic membranes and the development of the placenta.
BSC II Z1	**Zoology - I**	Analyze the structure and function of various invertebrate types, including habit, habitat, morphology, organ systems, life cycle, adaptations, and	Classify invertebrates into different groups based on their distinguishing characteristics and phylogenetic relationships.	Explain the ecological roles of invertebrates and their importance in maintaining healthy ecosystems.	Evaluate the threats faced by invertebrates, such as habitat loss, pollution, and climate change, and propose potential conservation strategies.	Design and conduct scientific investigations to study the behavior, ecology, and conservation of invertebrates.

		evolutionary relationships.				
BSC II Z2	**Zoology - II**	Analyze how biochemical processes underpin the physiological functions of different animal systems, including digestion, respiration, circulation, excretion, reproduction, and nervous control.	Understand and explain the major metabolic pathways in animals, like glycolysis, gluconeogenesis, citric acid cycle, and oxidative phosphorylation, with a focus on energy production and utilization.	Evaluate the coordinated actions of various organ systems, such as endocrine, cardiovascular, and respiratory systems, in response to internal and external stimuli, maintaining homeostasis in diverse animal groups.	Employ acquired knowledge to analyze real-world scenarios and explain animal adaptations to different environments, including temperature, diet, and altitude.	Design and conduct basic experiments to investigate physiological or biochemical phenomena in animals, interpret data, and effectively communicate findings through written and oral presentations.
BSC II Z3	**Zoology - III**	Analyze the structure, function, and interconnectedness of the immune system's components, including innate and adaptive immunity, humoral and cell-mediated responses, and the role of major immune cell types.	Classify and characterize diverse microorganisms (bacteria, archaea, viruses, fungi) based on their morphology, metabolism, ecology, and pathogenic potential. Understand their interactions with the human body, both beneficial and harmful.	Gain hands-on experience with fundamental genetic engineering techniques like DNA extraction, plasmid isolation, gel electrophoresis, PCR, and basic biomolecule analysis. Interpret experimental results and draw meaningful conclusions.	Analyze the development, production, and mechanisms of action of vaccines, antibiotics, and other immunotherapeutic agents. Critically evaluate diagnostic tools used in microbiology and biotechnology.	Develop skills in scientific reasoning, data analysis, and interpreting complex biological phenomena related to immunity, microorganisms, and biotechnological applications. Propose research questions and design experiments to address them.
BSC III Z1	**Zoology - I**	Describe the defining features of the phylum Chordata, including the presence of a notochord, dorsal nerve cord, pharyngeal gill slits, and post-anal tail, and explain their significance in animal evolution.	Classify major chordate groups (vertebrates and cephalochordates) based on their distinctive morphological, ecological, and evolutionary characteristics. Compare and contrast the features of different chordate	Analyze the key evolutionary transitions within Chordata, including the emergence of bony fish, tetrapods, amniotes, and mammals. Explain the selective pressures and adaptations that drove these transformations.	Describe the major stages of embryonic development in representative chordates, highlighting the formation of the notochord, dorsal nerve cord, and other characteristic features. Relate developmental processes to evolutionary changes in body plans.	Understand the ecological roles of various chordate groups in diverse aquatic and terrestrial ecosystems. Apply knowledge of chordate anatomy, physiology, and behavior to analyze anthropogenic impacts on chordate populations and the broader environment.

			subgroups (e.g., fishes, amphibians, reptiles, mammals, etc.).			
BSC III Z2	**Zoology - II**	Analyze the interactions between organisms and their environment, including population dynamics, community ecology, energy flow, and nutrient cycling. Explain how these principles regulate the structure and function of ecosystems.	Apply evolutionary concepts to understand the diversity of life on Earth. Analyze how adaptation, natural selection, and other evolutionary forces have shaped species, traits, and ecosystems over time.	Assess the impact of human activities on the environment, including pollution, climate change, habitat loss, and resource depletion. Develop skills in environmental problem-solving and propose potential solutions.	Conduct hands-on field investigations to study ecological and evolutionary phenomena in diverse ecosystems. Analyze data, interpret results, and effectively communicate findings through scientific reports and presentations.	Cultivate a critical understanding of the interconnectedness of humans and the natural world. Develop a sense of responsibility for environmental conservation and promote sustainable practices for the future of our planet.
BSC III Z3	**Zoology - III**	Design and conduct field and laboratory experiments to investigate various aspects of animal biology, including behavior, morphology, physiology, and ecology. Apply your knowledge to real-world applications such as pest control, animal husbandry, and wildlife conservation.	Analyze the diverse behaviors of animals in their natural environment, focusing on communication, foraging, mating, social interactions, and environmental adaptations. Employ ethological principles to interpret animal behavior and its ecological significance.	Utilize statistical tools and software to analyze biological data collected in applied zoological and ethological studies. Understand and interpret key statistical tests, confidence intervals, and regression analyses to draw meaningful conclusions from your data.	Combine your understanding of applied zoology, ethology, and biostatistics to tackle real-world problems related to animal populations, wildlife management, and human-animal interactions. Propose evidence-based solutions and evaluate their potential impact.	Effectively communicate your findings from applied zoological and ethological studies to both scientific and non-scientific audiences. Utilize various communication strategies, including written reports, presentations, and visual aids, to convey complex information in a clear and engaging manner.

B.Sc. Zoology Program Summary Sheet			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	Apply scientific knowledge and principles to solve complex problems in the field of Zoology.	Master the fundamental principles of animal taxonomy, classification, and evolutionary relationships.	Become successful professionals in fields related to Zoology, such as research, academia, government agencies, environmental conservation, animal husbandry, and biotechnology.
PO2/PSO2/PEO2	Conduct scientific investigations, analyze data, and draw valid conclusions based on evidence.	Understand the structure, function, and interactions of cells, tissues, organs, and organ systems in various animal groups.	Pursue postgraduate studies in Zoology or related disciplines to advance scientific knowledge and contribute to meaningful research.
PO3/PSO3/PEO3	Effectively communicate scientific findings through written and oral presentations, reports, and publications.	Analyze the processes of development, reproduction, and physiology in diverse animal taxa.	Apply critical thinking and problem-solving skills to address real-world challenges related to animal populations, biodiversity conservation, and human-animal interactions.
PO4/PSO4/PEO4	Demonstrate critical thinking and problem-solving skills in analyzing biological phenomena.	Apply knowledge of animal behavior, ecology, and conservation biology to address environmental challenges.	Demonstrate effective communication, collaboration, and leadership skills within the scientific community and broader society.
PO5/PSO5/PEO5	Work effectively in teams and collaborate with scientists from diverse backgrounds.	Design and conduct field and laboratory experiments to investigate various aspects of animal biology.	Maintain ethical principles and professional integrity in all aspects of their work and contribute to sustainable development.
PO6/PSO6/PEO6	Adapt to technological advancements and utilize computational tools for data analysis and research.	Utilize biostatistical tools and software to analyze biological data and draw meaningful conclusions.	Embrace lifelong learning and continuously update their knowledge and skills in the rapidly evolving field of Zoology.

Mapping of Course Outcomes of Various Courses of B.Sc. Zoology Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)				
Course Outcome	**PO**	**PSO**	**PEO**	**Level**
BSC I ZOOLOGY PAPER I				
Understand basic principles of taxonomy	PO 1	PSO 1	PEO 1, PEO 2, PEO 6	Remember, Medium
Understand protozoa and metazoa concepts	PO 1	PSO 2	PEO 1, PEO 2, PEO 6	Remember, Medium
Classify non-chordata and chordata	PO 1, PO 4	PSO 1, PSO 3	PEO 1, PEO 3, PEO 6	Medium, Apply
Identify and classify specific protozoa	PO 1, PO 4	PSO 1, PSO 5	PEO 1, PEO 3, PEO 6	Hard, Analyze
Identify and classify specific non-chordata	PO 1, PO 4	PSO 1, PSO 5	PEO 1, PEO 3, PEO 6	Hard, Analyze
BSC I ZOOLOGY PAPER II				
Describe structure & function of animal cell components	PO 1	PSO 2	PEO 1, PEO 2, PEO 6	Medium Understand
Explain cell membrane transport mechanisms	PO 1, PO 4	PSO 2	PEO 1, PEO 3, PEO 6	Medium Apply
Compare & contrast prokaryotic & eukaryotic cells	PO 1, PO 4	PSO 1, PSO 2	PEO 1, PEO 3, PEO 6	Medium Analyze
Identify cell division types & explain their importance	PO 1, PO 4	PSO 2, PSO 3	PEO 1, PEO 3, PEO 6	Hard Analyze
Apply cell biology knowledge to human physiology & disease	PO 1, PO 3, PO 8	PSO 2, PSO 4	PEO 1, PEO 3, PEO 5, PEO 6	Hard Apply
BSC I ZOOLOGY PAPER III				
Explain historical development & types of embryology	PO 1	PSO 3	PEO 1, PEO 2, PEO 6	Medium Understand
Compare & contrast gametogenesis in males & females	PO 1, PO 4	PSO 3	PEO 1, PEO 3, PEO 6	Medium Analyze
Describe fertilization & changes in egg cytoplasm	PO 1	PSO 3	PEO 1, PEO 2, PEO 6	Medium Understand
Explain cleavage, blastulation, gastrulation & body plan formation	PO 1, PO 4	PSO 3	PEO 1, PEO 3, PEO 6	Hard Analyze
Describe chick embryo development with extra embryonic membranes & placenta	PO 1, PO 3	PSO 3, PSO 4	PEO 1, PEO 3, PEO 6	Medium Apply

Mapping of Course Outcomes of Various Courses of B.Sc. Zoology Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)				
Course Outcome	**PO**	**PSO**	**PEO**	**Level**
BSC II ZOOLOGY PAPER I				
Analyze structure & function of invertebrates	PO 1, PO 2, PO 4	PSO 1, PSO 2, PSO 3	PEO 1, PEO 2, PEO 3, PEO 6	Hard Analyze
Classify invertebrates by characteristics & phylogeny	PO 1, PO 4	PSO 1, PSO 3	PEO 1, PEO 3, PEO 6	Hard Analyze
Explain ecological roles of invertebrates	PO 1, PO 4	PSO 2, PSO 4	PEO 1, PEO 3, PEO 6, PEO 8	Medium Analyze
Evaluate threats to invertebrates & propose conservation strategies	PO 1, PO 4, PO 8	PSO 4, PSO 5	PEO 1, PEO 3, PEO 5, PEO 6	Hard Apply
Design & conduct investigations on invertebrates	PO 1, PO 2, PO 5, PO 6	PSO 4, PSO 5	PEO 1, PEO 3, PEO 5, PEO 6	Hard Create
BSC II ZOOLOGY PAPER II				
Analyze biochemical basis of animal systems	PO 1, PO 4	PSO 2, PSO 3	PEO 1, PEO 3, PEO 6	Hard Analyze
Understand and explain major metabolic pathways	PO 1	PSO 2	PEO 1, PEO 2, PEO 6	Medium Understand
Evaluate coordinated responses of organ systems	PO 1, PO 4	PSO 2, PSO 3	PEO 1, PEO 3, PEO 6	Hard Analyze
Apply knowledge to animal adaptations	PO 1, PO 4	PSO 2, PSO 4	PEO 1, PEO 3, PEO 6	Medium Apply
Design and conduct experiments, interpret data, communicate findings	PO 1, PO 2, PO 3, PO 6	PSO 2, PSO 5	PEO 1, PEO 2, PEO 3, PEO 5, PEO 6	Hard Analyze
BSC II ZOOLOGY PAPER III				
Analyze immune system components & interconnectedness	PO 1, PO 4	PSO 2, PSO 4	PEO 1, PEO 3, PEO 6	Hard Analyze
Classify & characterize microorganisms	PO 1, PO 4	PSO 2, PSO 4	PEO 1, PEO 3, PEO 6	Medium Analyze
Gain hands-on experience with genetic engineering techniques	PO 1, PO 2, PO 6	PSO 2, PSO 5	PEO 1, PEO 2, PEO 3, PEO 6	High Apply
Analyze vaccines, antibiotics, & diagnostic tools	PO 1, PO 4	PSO 2, PSO 4	PEO 1, PEO 3, PEO 6	Hard Analyze
Develop research skills & propose experiments	PO 1, PO 2, PO 4, PO 6	PSO 2, PSO 5	PEO 1, PEO 2, PEO 3, PEO 6	Hard Create

Mapping of Course Outcomes of Various Courses of B.Sc. Zoology Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)				
Course Outcome	**PO**	**PSO**	**PEO**	**Level**
BSC III ZOOLOGY PAPER I				
Describe defining features of phylum Chordata & their significance	PO 1	PSO 1, PSO 3	PEO 1, PEO 2, PEO 6	Medium Understand
Classify major chordate groups & compare/contrast subgroups	PO 1, PO 4	PSO 1, PSO 2	PEO 1, PEO 3, PEO 6	Medium Analyze
Analyze key evolutionary transitions within Chordata	PO 1, PO 4	PSO 1, PSO 3	PEO 1, PEO 3, PEO 6	Hard Analyze
Describe major stages of chordate development & relate to evolution	PO 1, PO 4	PSO 1, PSO 3	PEO 1, PEO 3, PEO 6	Medium Analyze
Understand ecological roles of chordates & apply knowledge to analyze anthropogenic impacts	PO 1, PO 3, PO 4, PO 8	PSO 2, PSO 4	PEO 1, PEO 3, PEO 5, PEO 6, PEO 8	Hard Apply
BSC III ZOOLOGY PAPER II				
Analyze interactions & principles regulating ecosystems	PO 1, PO 4	PSO 4	PEO 1, PEO 3, PEO 6	Hard Analyze
Apply evolutionary concepts to analyze biodiversity	PO 1, PO 4	PSO 1, PSO 4	PEO 1, PEO 3, PEO 6	Hard Analyze
Assess human impact & propose environmental solutions	PO 1, PO 3, PO 4, PO 8	PSO 4	PEO 1, PEO 3, PEO 5, PEO 6, PEO 8	Hard Apply
Conduct field investigations, analyze data & communicate findings	PO 1, PO 2, PO 3, PO 6	PSO 4, PSO 5	PEO 1, PEO 2, PEO 3, PEO 5, PEO 6	Hard Create
Cultivate critical understanding & promote sustainable practices	PO 3, PO 8	PSO 4	PEO 3, PEO 5, PEO 6, PEO 8	Medium Apply
BSC III ZOOLOGY PAPER III				
Design & conduct experiments, apply knowledge to real-world applications	PO 1, PO 2, PO 5, PO 6	PSO 4, PSO 5	PEO 1, PEO 2, PEO 3, PEO 5, PEO 6	Hard Create
Analyze diverse animal behaviors, apply ethological principles	PO 1, PO 4	PSO 2, PSO 4	PEO 1, PEO 3, PEO 6	Hard Analyze
Utilize statistical tools & software, interpret results	PO 1, PO 2, PO 6	PSO 4, PSO 5	PEO 1, PEO 2, PEO 3, PEO 6	Hard Apply
Combine knowledge to tackle real-world problems, propose solutions	PO 1, PO 3, PO 4, PO 8	PSO 4	PEO 1, PEO 3, PEO 5, PEO 6, PEO 8	Hard Apply
Effectively communicate findings to scientific & non-scientific audiences	PO 3, PO 5	PSO 5	PEO 1, PEO 2, PEO 3, PEO 5, PEO 6	Hard Create

Course Outcomes of All Courses of M.Sc. Pre. Zoology						
Course Code	**Course Title**	**Course Outcome1**	**Course Outcome2**	**Course Outcome3**	**Course Outcome4**	**Course Outcome5**
M. Sc. Pre Z1	**Zoology - I**	The first step in classifying an animal is to identify its distinguishing features, or characters. These characters can be physical, such as body size, shape, and color, or behavioral, such as feeding habits and mating rituals. By comparing the characters of different animals, taxonomists can group them into categories based on their similarities.	A clade is a group of organisms that share a common ancestor and all its descendants. Clades are the fundamental units of classification in modern taxonomy. They are based on the principle of monophyly, which means that all members of a clade must share a more recent common ancestor with each other than with any other organism outside the clade.	Once animals have been grouped into clades, they can be further classified into a hierarchy of taxonomic ranks.	There are two main sets of codes that govern the naming and classification of animals: the International Code of Zoological Nomenclature (ICZN) for animals and the International Code of Nomenclature for algae, fungi, and plants (ICPN) for plants, algae, and fungi. These codes ensure that there is a standardized system for naming and classifying organisms, so that scientists from all over the world can communicate with each other clearly.	Animal taxonomy is not just about academic curiosity; it is also essential for conservation efforts. By understanding the relationships between different animals, we can better identify species that are at risk of extinction and develop strategies to protect them. Additionally, taxonomy can help us track the spread of invasive species and diseases.
M. Sc. Pre Z2	**Zoology - II**	Identify and describe the major invertebrate phyla, their defining characteristics, and evolutionary relationships.	Explain the structural and functional adaptations of invertebrates to diverse habitats and lifestyles.	Analyze the physiological processes of invertebrates, including respiration, circulation, digestion, excretion, and reproduction.	Demonstrate laboratory techniques for observing and studying invertebrate structure and function, such as dissection, microscopy, and staining.	Apply knowledge of invertebrate structure and function to real-world issues, such as conservation, pest control, and disease transmission.

M. Sc. Pre Z3	**Zoology - III**	Grasp the Fundamentals of Life at the Molecular Level: Explain the structure and function of DNA, RNA, and proteins. Understand the central dogma of molecular biology: DNA replication, transcription, and translation. Analyze mechanisms of gene regulation in prokaryotes and eukaryotes.	Master Key Molecular Techniques: Perform basic gel electrophoresis and DNA extraction techniques. Apply polymerase chain reaction (PCR) to amplify specific DNA sequences. Utilize restriction enzymes and cloning vectors for recombinant DNA manipulation.	Explore Cutting-Edge Genomic and Proteomic Tools:Analyze DNA sequences using bioinformatics tools to identify genes and mutations. Understand the principles of next-generation sequencing (NGS) technologies. Interpret mass spectrometry data to characterize protein structure and function.	Connect Molecular Biology to Diverse Applications: Explain the molecular basis of human diseases and potential therapeutic strategies. Discuss the role of genetic engineering in biotechnology and crop improvement. Analyze ethical considerations surrounding CRISPR-Cas9 and other gene editing technologies.	Develop Scientific Skills and Critical Thinking: Design and interpret scientific experiments related to molecular biology. Evaluate and communicate scientific findings in written and oral formats. Think critically about the latest discoveries and advancements in molecular research.
M. Sc. Pre Z4	**Zoology - IV**	Analyze the fundamental physiological processes of animals: Explain the principles of homeostasis and its role in maintaining internal balance. Describe the cellular basis of function, including membrane transport, energy metabolism, and signal transduction. Analyze the mechanisms of nerve impulse transmission and muscle contraction.	Understand the function of major organ systems in animals: Explain the physiology of digestion, absorption, and nutrition in different animal groups. Analyze the mechanisms of gas exchange and transport in various respiratory systems. Describe the structure and function of the circulatory system, including blood composition and regulation. Identify the mechanisms of excretion and osmoregulation in diverse animal species.	Explore the influence of environment and adaptation on animal physiology: Discuss the physiological adaptations of animals to extreme environments, such as cold, heat, and dehydration. Analyze the impact of environmental factors like salinity, altitude, and light on animal physiology. Explain the role of physiological adaptations in animal behavior and locomotion.	Integrate knowledge of animal physiology with other disciplines: Apply principles of animal physiology to understand ecological interactions and animal distribution. Analyze the physiological basis of animal behaviors, such as reproduction, communication, and defense. Discuss the application of animal physiology in agriculture, animal husbandry, and veterinary medicine.	Develop critical thinking and research skills in animal physiology: Design and interpret experiments to investigate specific physiological processes in animals. Evaluate and critically analyze scientific literature on animal physiology. Communicate scientific findings effectively through written and oral presentations.

M. Sc. Pre Z5	**Zoology - V**	Grasp the fundamentals of life at the molecular level: Explain the structure and function of carbohydrates, lipids, proteins, nucleic acids, and other biomolecules. Understand the central dogma of molecular biology: DNA replication, transcription, and translation. Analyze energy metabolism pathways including glycolysis, Krebs cycle, and oxidative phosphorylation.	Explore the intricate world of enzymes and enzyme kinetics: Explain the principles of enzyme catalysis and enzyme specificity. Analyze factors affecting enzyme activity, including pH, temperature, and inhibitors. Predict enzyme reaction rates using Michaelis-Menten kinetics. Diagrams of enzyme structure and illustrations of Michaelis-Menten plots.	Delve into the diverse metabolic processes of living organisms: Analyze the pathways of carbohydrate, lipid, protein, and nucleic acid metabolism in health and disease.Understand the regulation of metabolic pathways based on cellular needs and environmental conditions. Discuss the interconnections between different metabolic pathways and their roles in maintaining cellular homeostasis.	Connect biochemistry to real-world applications: Explain the biochemical basis of human diseases like diabetes, cancer, and neurodegenerative disorders. Discuss the role of biochemistry in biotechnology, drug development, and forensic science. Analyze the metabolic consequences of dietary choices and nutritional imbalances.	Develop critical thinking and research skills in biochemistry: Design and interpret biochemical experiments to investigate cellular processes. Evaluate and critically analyze scientific literature on biochemical topics. Effectively communicate scientific findings through written and oral presentations.
M. Sc. Pre Z6	**Zoology - VI**	Comprehend the fundamental principles of evolution and their application to animals: Explain Darwinian theory, natural selection, and other mechanisms of evolution. Identify and analyze evidence for evolution from various sources, including paleontology, molecular biology, and comparative anatomy. Discuss the process of speciation and the divergence of animal lineages throughout history.	Utilize biostatistical methods to analyze and interpret biological data: Apply descriptive statistics like measures of central tendency and dispersion to summarize animal data. Perform hypothesis testing using parametric and non-parametric statistical tests. Design and analyze experiments related to animal evolution and ecology.	Integrate evolutionary theory with biostatistical analysis in diverse contexts: Analyze the evolution of specific animal traits and adaptations using relevant statistical methods. Investigate the relationship between environmental factors and animal variation and distribution. Discuss the impact of human activities on animal populations and the potential for evolutionary change.	Develop critical thinking and analytical skills in the context of animal evolution and biostatistics: Evaluate the strengths and limitations of different evolutionary and biostatistical approaches. Interpret scientific literature critically and identify potential biases or errors in methodology. Effectively communicate evolutionary and biostatistical findings in written and oral presentations.	Explore the ethical implications of studying and applying evolutionary and biostatistical knowledge: Discuss the ethical considerations involved in research on animal subjects and conservation efforts. Analyze the potential misuse of evolutionary and biostatistical knowledge for discriminatory or harmful purposes. Promote responsible and ethical application of these disciplines for the benefit of animals and ecosystems.

Course Outcomes of All Courses of M.Sc. Final. Zoology						
Course Code	**Course Title**	**Course Outcome1**	**Course Outcome2**	**Course Outcome3**	**Course Outcome4**	**Course Outcome5**
MSc Final Z1	**Zoology - I**	Students will be able to describe the origin, evolution, and general characteristics of Agnatha (Ostracoderms and Cyclostomes).	Students will be able to explain the early Gnathostomes (Placoderms).	Students will be able to compare and contrast the Elasmobranchii, Holocephali, Dipnoi, and Crossopterygii.	Students will be able to analyze the adaptive radiation in bony fishes.	Students will be able to discuss the origin, evolution, and adaptive radiation of Amphibia.
MSc Final Z2	**Zoology - II**	Students will be able to explain the concept of ecosystem dynamics and management.	Students will be able to assess the environmental impact on ecosystems.	Students will be able to describe the principles of conservation and biodiversity management.	Students will be able to analyze the organization and dynamics of ecological communities.	Students will be able to discuss the ecological outlook and its implications.
MSc Final Z3	**Zoology - III**	Students will be able to describe the different cleavage types and give a comparative account of gastrulation in various animals.	Students will be able to explain the processes of neurulation, mesoderm and endoderm formation during early vertebrate development.	Students will be able to distinguish between cell commitment and differentiation and provide examples of cell specification in nematodes and germ cell determinants.	Students will be able to discuss the establishment of body axes in different animals, including the role of proximate tissue interactions and genetics.	Students will be able to explain the concept of homeobox genes and their function in different phylogenetic groups.
MSc Final Z4	**Zoology - IV**	Students will be able to describe the basic principles and applications of various microscopy techniques, including scanning electron microscopy, transmission electron microscopy, atomic force microscopy, and freeze-fracture replica technique.	Students will be able to explain the principles and applications of various centrifugation and electrophoresis techniques, including differential and density gradient centrifugation, paper, agarose, PAGE, and capillary electrophoresis.	Students will be able to compare and contrast various chromatography techniques, including paper, thin-layer, gas chromatography, high-performance liquid chromatography, ion exchange chromatography, and affinity chromatography.	Students will be able to discuss the principles and applications of various radiation techniques in biology, including radiation dosimetry, use of radioisotopes and tracers, and autoradiography.	Students will be able to explain the design and applications of various assays, including colorimetric assays, enzyme-linked immunosorbent assays (ELISA), and bioassays.

MSc Final Z5	**Zoology - V**	Students will be able to describe the factors affecting population growth, including density-dependent and density-independent factors.	Students will be able to explain the different methods of population estimation, including census, sampling, indices, and transect estimates.	Students will be able to discuss the techniques for restoration of wildlife populations, such as captive breeding, soft and hard release, and management of endangered species.	Students will be able to analyze the methods for habitat evaluation, including reconnaissance surveys, permanent condition trend transects, and wildlife evaluation techniques.	Students will be able to explain the concept of environmental monitoring and its importance, including the use of physical, chemical, and biological indicators.
MSc Final Z6	**Zoology - VI**	Students will be able to describe the major groups of microorganisms including bacteria, archaea, protists, and fungi, and their distinguishing characteristics.	Students will be able to explain the basic principles of microbial growth and metabolism, including the processes of nutrient uptake, energy production, and macromolecule synthesis.	Students will be able to discuss the ecological roles of microorganisms in the environment, including their involvement in biogeochemical cycles, decomposition, and symbiosis.	Students will be able to analyze the applications of microorganisms in various fields, such as biotechnology, medicine, agriculture, and environmental remediation.	Students will be able to explain the principles of microbial control methods, including physical, chemical, and biological methods.

M.Sc. Zoology Program Summary Sheet			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	Analyze and interpret biological data related to animal classification and phylogenetic relationships.	Apply taxonomic principles and codes (ICZN and ICPN) for accurate classification and naming of animal species.	Promote responsible taxonomic practices that consider ethical and environmental implications.
PO2/PSO2/PEO2	Describe the structural and functional adaptations of diverse invertebrate groups to their environments.	Conduct laboratory investigations to observe and analyze invertebrate morphology and physiology.	Apply knowledge of invertebrates to real-world issues like conservation and disease control in a responsible and ethical manner.
PO3/PSO3/PEO3	Explain the fundamental principles of molecular biology and apply them to various cellular processes.	Utilize key molecular techniques (gel electrophoresis, PCR, cloning) to manipulate and analyze DNA.	Uphold ethical considerations in gene manipulation and genetic engineering practices.
PO4/PSO4/PEO4	Analyze the physiological mechanisms and adaptations of animals in different environmental contexts.	Integrate knowledge of animal physiology with other disciplines like ecology and behavior.	Apply insights from animal physiology to inform sustainable practices in agriculture and animal management.
PO5/PSO5/PEO5	Understand the intricate workings of metabolism and its connection to human health and disease.	Analyze biochemical processes using enzyme kinetics and metabolic pathway knowledge.	Apply evolutionary principles and biostatistical methods to analyze and interp
PO6/PSO6/PEO6	Apply evolutionary principles and biostatistical methods to analyze and interpret data related to animal Advocate for responsible application of biochemistry in drug development and forensic science.populations.	Utilize critical thinking and analytical skills to evaluate scientific literature and research methodologies.	Promote responsible and ethical use of evolution and biostatistics for conservation efforts and animal welfare.

Mapping of Course Outcomes of Various Courses of M.Sc. Zoology Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)				
Course Outcome	**PO**	**PSO**	**PEO**	**Level**
MSC Pre ZOOLOGY PAPER I				
Identify distinguishing features for animal classification	PO 1	PSO 1	PEO 1	Analyze Medium
Understand and explain concept of clades	PO 1	PSO 1	PEO 1	Understand , Medium
Apply cladistics for further animal classification	PO 1	PSO 1	PEO 1	Apply, Medium
Analyze and apply naming codes (ICZN/ICPN)	PO 1	PSO 1	PEO 1	Analyze, Medium
Explain importance of taxonomy for conservation & other issues	PO 1	PSO 1	PEO 1, PEO 2	Apply, Medium
MSC Pre ZOOLOGY PAPER II				
Identify & describe invertebrate phyla, characteristics, & relationships	PO 2	PSO 2	PEO 2	Analyze, Medium
Explain invertebrate adaptations to diverse habitats & lifestyles	PO 2	PSO 2	PEO 2	Apply, Medium
Analyze physiological processes of invertebrates	PO 4	PSO 2	PEO 2	Analyze, Medium
Demonstrate laboratory techniques for studying invertebrate structure & function	PO 2	PSO 2	PEO 2	Apply, Medium
Apply knowledge of invertebrates to real-world issues	PO 2, PO 4	PSO 2	PEO 2, PEO 4	Apply, Medium
MSC Pre ZOOLOGY PAPER III				
Explain structure & function of DNA, RNA, proteins & central dogma	PO 3	PSO 3	PEO 1, PEO 3	Analyze, Hard
Master key molecular techniques (gel electrophoresis, PCR, cloning)	PO 2, PO 6	PSO 3	PEO 2, PEO 3	Apply, Hard
Explore cutting-edge genomic & proteomic tools (NGS, mass spectrometry)	PO 1, PO 6	PSO 3	PEO 1, PEO 3	Analyze, High
Connect molecular biology to diverse applications (diseases, engineering, ethics)	PO 3, PO 4	PSO 3	PEO 1, PEO 3, PEO 5	Apply, Hard
Develop scientific skills & critical thinking (experiments, communication, reflection)	PO 1, PO 2, PO 6	PSO 3	PEO 1, PEO 2, PEO 3	Create, Hard
MSC Pre ZOOLOGY PAPER IV				
Analyze homeostasis, cellular basis of function, & nerve/muscle mechanisms	PO 4	PSO 4	PEO 1, PEO 3, PEO 4	Analyze, Hard
Understand & explain major organ system functions	PO 4	PSO 4	PEO 1, PEO 3, PEO 4	Analyze, Medium
Explore environmental & adaptive influences on physiology	PO 4	PSO 4	PEO 1, PEO 3, PEO 4	Analyze, Medium
Integrate animal physiology with other disciplines	PO 1, PO 4	PSO 4	PEO 1, PEO 3, PEO 4, PEO 6	Apply, Hard

Develop critical thinking & research skills in animal physiology	PO 1, PO 2, PO 6	PSO 4	PEO 1, PEO 2, PEO 3, PEO 6	Create, Hard
MSC Pre ZOOLOGY PAPER V				
Explain structure & function of biomolecules & central dogma	PO 3	PSO 3	PEO 1, PEO 3	Analyze, Hard
Explore enzymes & enzyme kinetics	PO 3	PSO 3	PEO 1, PEO 3	Analyze, Hard
Analyze metabolic pathways & regulation	PO 3	PSO 3	PEO 1, PEO 3	Analyze, Hard
Connect biochemistry to real-world applications	PO 3, PO 5	PSO 3	PEO 1, PEO 3, PEO 5	Apply, Hard
Develop critical thinking & research skills	PO 1, PO 2, PO 6	PSO 3	PEO 1, PEO 2, PEO 3, PEO 6	Create, Hard
MSC Pre ZOOLOGY PAPER VI				
Comprehend evolution principles & evidence	PO 1, PO 4	PSO 6	PEO 1, PEO 3, PEO 6	Analyze, Hard
Utilize biostatistical methods for data analysis	PO 1, PO 6	PSO 6	PEO 1, PEO 3, PEO 6	Apply, Hard
Integrate evolution & biostatistics in diverse contexts	PO 1, PO 4	PSO 6	PEO 1, PEO 3, PEO 4, PEO 6	Apply, Hard
Develop critical thinking & analytical skills	PO 1, PO 2, PO 6	PSO 6	PEO 1, PEO 2, PEO 3, PEO 6	Evaluate, Hard
Explore ethical implications of evolution & biostatistics	PO 3, PO 8	PSO 6	PEO 1, PEO 3, PEO 5, PEO 6, PEO 8	Apply, Medium

Mapping of Course Outcomes of Various Courses of M.Sc. Zoology Program With Program Outcomes (Pos),Program Specific Outcomes (Psos) & Program Educational Objectives (Peos)				
Course Outcome	**PO**	**PSO**	**PEO**	**Level**
MSC Final ZOOLOGY PAPER I				
Agnatha origin, evolution, and characteristics	PO 1	PSO 1	PEO 1, PEO 3	Analyze, Medium
Early Gnathostomes (Placoderms)	PO 1	PSO 1	PEO 1, PEO 3	Explain, Medium
Compare and contrast Elasmobranchii, Holocephali, Dipnoi, and Crossopterygii	PO 1	PSO 1	PEO 1, PEO 3	Analyze, Medium
Analyze adaptive radiation in bony fishes	PO 1, PO 4	PSO 1	PEO 1, PEO 3, PEO 4	Analyze, Hard
Amphibia origin, evolution, and adaptive radiation	PO 1	PSO 1	PEO 1, PEO 3	Analyze, Medium
MSC Final ZOOLOGY PAPER I				
Explain ecosystem dynamics & management	PO 1, PO 4	PSO 4	PEO 1, PEO 3, PEO 4	Understand, Medium
Assess environmental impact on ecosystems	PO 1, PO 3, PO 4	PSO 4	PEO 1, PEO 3, PEO 4, PEO 5	Apply, Hard
Describe conservation & biodiversity management principles	PO 1, PO 3	PSO 4	PEO 1, PEO 3, PEO 5	Understand,Medium
Analyze community organization & dynamics	PO 1, PO 4	PSO 4	PEO 1, PEO 3, PEO 4	Analyze, Hard
Discuss ecological outlook & implications	PO 1, PO 3, PO 8	PSO 4	PEO 1, PEO 3, PEO 5, PEO 8	Apply, Medium
MSC Final ZOOLOGY PAPER I				
Describe cleavage types & compare gastrulation	PO 3	PSO 2	PEO 1, PEO 3	Analyze, Medium
Explain neurulation, mesoderm & endoderm formation	PO 3	PSO 2	PEO 1, PEO 3	Analyze, Medium
Distinguish cell commitment & differentiation, provide examples	PO 3	PSO 2	PEO 1, PEO 3	Apply, Medium
Discuss body axis establishment in different animals	PO 3	PSO 2	PEO 1, PEO 3	Analyze, Hard
Explain homeobox genes & their function across groups	PO 3	PSO 2	PEO 1, PEO 3	Analyze, Medium
MSC Final ZOOLOGY PAPER I				
Describe microscopy techniques & applications	PO 2	PSO 2	PEO 2, PEO 3	Understand, Medium
Explain centrifugation & electrophoresis techniques & applications	PO 2, PO 6	PSO 2	PEO 2, PEO 3, PEO 6	Analyze, Medium
Compare & contrast chromatography techniques	PO 2, PO 6	PSO 2	PEO 2, PEO 3, PEO 6	Analyze, Medium

Discuss radiation techniques & applications in biology	PO 1, PO 2	PSO 2	PEO 1, PEO 2, PEO 3	Apply, Medium
Explain assay design & applications	PO 2, PO 6	PSO 2	PEO 2, PEO 3, PEO 6	Apply, Medium
MSC Final ZOOLOGY PAPER I				
Describe factors affecting population growth	PO 1	PSO 3	PEO 1, PEO 3, PEO 4	Analyze
Explain population estimation methods	PO 2	PSO 3	PEO 2, PEO 3, PEO 4	Understand
Discuss wildlife population restoration techniques	PO 2, PO 4	PSO 3	PEO 2, PEO 3, PEO 4, PEO 5	Apply
Analyze habitat evaluation methods	PO 2, PO 6	PSO 3	PEO 2, PEO 3, PEO 6	Analyze, Medium
Explain environmental monitoring and its importance	PO 1, PO 4	PSO 3	PEO 1, PEO 3, PEO 4, PEO 5	Apply, Medium
MSC Final ZOOLOGY PAPER I				
Describe major microbial groups & characteristics	PO 1	PSO 2	PEO 1, PEO 3	Analyze, Medium
Explain basic microbial growth & metabolism	PO 1	PSO 2	PEO 1, PEO 3	Analyze, Medium
Discuss ecological roles of microorganisms	PO 1, PO 4	PSO 2	PEO 1, PEO 3, PEO 4	Apply, Medium
Analyze applications of microorganisms	PO 1, PO 4, PO 5	PSO 2	PEO 1, PEO 3, PEO 4, PEO 5	Analyze, Hard
Explain microbial control methods	PO 1	PSO 2	PEO 1, PEO 3	Analyze, Medium

B.B.A. Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
BBA I:	**Paper I: Business Communication**	CO1: Analyze and apply effective communication principles in various business contexts.	CO2: Develop critical thinking skills for drafting written and verbal business messages.	CO3: Demonstrate competence in different communication methods like reports, presentations, and group discussions.	CO4: Understand the importance of ethics and cultural sensitivity in business communication.	CO5: Apply technology effectively to enhance communication and collaboration within an organization.
	Paper II: Business Economics	CO1: Utilize economic concepts and theories to analyze business decisions and market trends.	CO2: Formulate demand and supply analysis to predict market behavior and pricing strategies. .	CO3: Understand the factors influencing production costs and resource allocation in a business.	CO4: Evaluate national income and economic welfare indicators for effective policy analysis	CO5: Apply fundamental knowledge of Keynesian and classical economic theories to real-world scenarios.
	Paper III: Legal Aspects of Indian Business	CO1: Comprehend the basic principles of contract law and apply them to business transactions. .	CO2: Understand different types of special contracts (Indemnity, Guarantee, Agency) and their legal implications	CO3: Analyze the provisions of the Sale of Goods Act and Negotiable Instruments Act in business contexts.	CO4: Recognize the key functionalities and responsibilities of companies under the Indian Companies Act.	CO5: Apply legal knowledge to navigate business situations and mitigate potential risks
BBA II:	**Paper I: Strategic Management**	CO1: Formulate and implement effective strategic plans based on environmental analysis and internal capabilities.	CO2: Conduct thorough environmental scanning to identify opportunities and threats for a business.	CO3: Understand and apply different corporate, business, and functional level strategies.	CO4: Develop effective control and evaluation mechanisms to monitor strategic performance.	CO5: Analyze and adapt organizational structures and culture to support strategic initiatives.
	Paper II: Marketing Management	CO1: Apply marketing concepts and frameworks to develop successful marketing strategies and tactics.	CO2: Conduct market research to understand customer needs and preferences in specific market segments.	CO3: Determine optimal pricing strategies and product differentiation approaches based on market analysis.	CO4: Design and implement effective promotional campaigns using various media channels.	CO5: Monitor and evaluate marketing performance using appropriate control techniques.
	Paper III: Human Resource Management	CO1: Develop and implement efficient processes for human resource planning, recruitment, selection, and training.	CO2: Design and manage career development programs and performance appraisal systems for employee motivation and growth.	CO3: Foster a positive work environment through effective leadership, communication, and conflict management.	CO4: Understand and comply with legal and ethical considerations in human resource practices.	CO5: Analyze the impact of human resource initiatives on organizational performance and profitability.
BBA III:	**Paper I: Organizational Behavior**	CO1: Apply theoretical perspectives on organizational behavior to explain and predict individual and group dynamics within organizations.	CO2: Understand the role of perception, personality, values, and attitudes in shaping individual behavior at work.	CO3: Analyze group dynamics, team development, and conflict resolution to enhance organizational effectiveness.	CO4: Recognize the importance of organizational change and development in adapting to competitive environments.	CO5: Develop critical thinking and problem-solving skills to address human resource challenges in organizations.
	Paper II: Indian Management Thought and Business Leaders	CO1: Apply principles of Indian ethos and spirituality to business management practices for ethical and sustainable development.	CO2: Analyze the philosophical insights of Indian epics like Bhagavad Gita and Ramayana in leadership and decision-making.	CO3: Evaluate the contributions of influential Indian thinkers like Swami Vivekananda, Mhatma Gandhi, and S.K. Chakarborty to management thought.	CO4: Learn from the success stories and business strategies of iconic Indian business leaders like JRD Tata, Krishna Bala, and Dhirubhai Ambani.	CO5: Develop a critical understanding of contemporary Indian business leaders and their contributions to global economies.
	Paper III: International Business	CO1: Analyze the opportunities and challenges of entering and operating in the global marketplace.	CO2: Understand the impact of cultural, economic, political, and legal environment on international business decisions.	CO3: Evaluate different forms of international business organizations and choose appropriate entry strategies.	CO4: Apply international financial management principles to manage currency exchange risks and foreign investments.	CO5: Develop effective strategies for global operations, supply chain management, and human resource practices in international businesses.

B.B.A. Program Summary Sheet			
S.NO.	**POs (Program Outcomes):**	**PSOs (Program Specific Outcomes):**	**PEOs (Program Educational Objectives):**
PO1/PSO1/PEO1	PO1: Apply fundamental knowledge of mathematics, statistics, and economics to analyze business data and support decision-making.	PSO1: Graduates will demonstrate proficiency in written and oral communication, tailoring messages to specific audiences and utilizing technology effectively for business communication purposes.	PEO1: Graduates will be effective business professionals with strong analytical and problem-solving skills, able to operate in and adapt to dynamic business environments.
PO2/PSO2/PEO2	PO2: Design and conduct market research, interpret data, and formulate effective marketing strategies and tactics.	PSO2: Graduates will be able to apply economic concepts and legal principles to analyze business decisions, navigate business transactions, and formulate effective strategies.	PEO2: Graduates will be ethical and socially responsible leaders, demonstrating awareness of cultural sensitivity and sustainability in business practices.
PO3/PSO3/PEO3	PO3: Develop and implement successful human resource practices, including recruitment, selection, training, and performance management.	PSO3: Graduates will possess critical thinking and analytical skills to examine organizational behavior, develop strategic plans, and implement successful marketing and human resource initiatives.	PEO3: Graduates will possess excellent communication and collaboration skills, effectively conveying ideas and working across diverse teams.
PO4/PSO4/PEO4	PO4: Collaborate effectively in teams, demonstrating leadership skills, conflict resolution abilities, and cultural sensitivity.	PSO4: Graduates will demonstrate cultural sensitivity and an understanding of global business environments, effectively operating in diverse international contexts.	PEO4: Graduates will have a comprehensive understanding of core business functions and the ability to apply theoretical knowledge to real-world business scenarios.
PO1/PSO1/PEO5	PO5: Identify and analyze business problems, formulate solutions, and implement effective strategies for various business functions.	PSO5: Graduates will exhibit ethical decision-making and corporate social responsibility, considering the impact of business activities on stakeholders and society.	PEO5: Graduates will be lifelong learners, continuously seeking knowledge and skills to enhance their professional development and contribute to the global business landscape
PO6	PO6: Communicate effectively across diverse audiences, both verbally and in writing, using appropriate communication tools and technology.		
PO7	PO7: Understand the economic, social, environmental, and ethical implications of business decisions, advocating for sustainable and responsible practices.		
PO8	PO8: Stay current with emerging trends and technologies in the business world, continuously updating knowledge and skills through lifelong learning.		
PO9	PO9: Apply technology effectively to enhance business processes, communication, data analysis, and decision-making.		
PO10	PO10: Demonstrate strong ethical principles and corporate social responsibility in all business activities, prioritizing stakeholder well-being and societal impact.		

Mapping of Course Outcomes of all courses of B.B.A.with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives				
Course Outcomes	**Program Outcomes**	**Program Specific Outcomes**	**Program Educational Objectives**	**Level**
B.B.A.I Business Communication (Paper I)				
CO1: Analyze and apply effective communication principles in various business contexts.	PO6, PO7	PSO1	PEO2, PEO3	Apply (Moderate)
CO2: Develop critical thinking skills for drafting written and verbal business messages.	PO5, PO6	PSO1	PEO1, PEO3	Analyze, Create (Moderate)
CO3: Demonstrate competence in different communication methods like reports, presentations, and group discussions.	PO3, PO6	PSO1, PSO3	PEO3	Demonstrate (Moderate)
CO4: Understand the importance of ethics and cultural sensitivity in business communication.	PO7, PO10	PSO5	PEO2, PEO5	Understand (Easy)
CO5: Apply technology effectively to enhance communication and collaboration within an organization.	PO9	PSO1	PEO3, PEO5	Apply (Moderate)
B.B.A.I Business Economics (Paper II)				
CO1: Utilize economic concepts and theories to analyze business decisions and market trends.	PO1, PO5	PSO2	PEO1, PEO4	Analyze, Apply (Moderate)
CO2: Formulate demand and supply analysis to predict market behavior and pricing strategies.	PO2, PO5	PSO2	PEO1, PEO4	Analyze, Create (Moderate)
CO3: Understand the factors influencing production costs and resource allocation in a business.	PO1, PO3	PSO2	PEO1, PEO4	Understand, Apply (Moderate)
CO4: Evaluate national income and economic welfare indicators for effective policy analysis.	PO1, PO7	PSO2	PEO1, PEO4	Analyze, Evaluate (Moderate)
CO5: Apply fundamental knowledge of Keynesian and classical economic theories to real-world scenarios.	PO5	PSO2	PEO1, PEO4	Apply (Moderate)
B.B.A.I Legal Aspects of Indian Business (Paper III)				
CO1: Comprehend the basic principles of contract law and apply them to business transactions.	PO5	PSO2	PEO1, PEO4	Understand, Apply (Moderate)

CO2: Understand different types of special contracts (Indemnity, Guarantee, Agency) and their legal implications.	PO5	PSO2	PEO1, PEO4	Understand, Analyze (Moderate)
CO3: Analyze the provisions of the Sale of Goods Act and Negotiable Instruments Act in business contexts.	PO5	PSO2	PEO1, PEO4	Analyze, Evaluate (Moderate)
CO4: Recognize the key functionalities and responsibilities of companies under the Indian Companies Act.	PO5	PSO2	PEO1, PEO4	Understand, Apply (Moderate)
CO5: Apply legal knowledge to navigate business situations and mitigate potential risks.	PO5, PO7	PSO2	PEO1, PEO4	Apply, Evaluate (Moderate)
B.B.A. II Strategic Management (Paper I)				
CO1: Formulate and implement effective strategic plans based on environmental analysis and internal capabilities.	PO1,PO5	PSO3	PEO1, PEO4	Create, Apply (Moderate)
CO2: Conduct thorough environmental scanning to identify opportunities and threats for a business.	PO2, PO7	PSO4	PEO1, PEO4	Analyze (Moderate)
CO3: Understand and apply different corporate, business, and functional level strategies.	PO5	PSO3	PEO1, PEO4	Understand, Apply (Moderate)
CO4: Develop effective control and evaluation mechanisms to monitor strategic performance.	PO5, PO6	PSO3	PEO1, PEO4	Evaluate (Moderate)
CO5: Analyze and adapt organizational structures and culture to support strategic initiatives.	PO3, PO4	PSO3	PEO3, PEO4	Analyze, Apply (Moderate)
B.B.A. II Marketing Management (Paper II)				
CO1: Apply marketing concepts and frameworks to develop successful marketing strategies and tactics.	PO5	PSO3	PEO1, PEO4	Apply (Moderate)
CO2: Conduct market research to understand customer needs and preferences in specific market segments.	PO2, PO5	PSO3	PEO1, PEO4	Analyze (Moderate)
CO3: Determine optimal pricing strategies and product differentiation approaches based on market analysis.	PO5	PSO3	PEO1, PEO4	Create, Apply (Moderate)

CO4: Design and implement effective promotional campaigns using various media channels.	PO3, PO5	PSO3	PEO3, PEO4	Create, Evaluate (Moderate)
CO5: Monitor and evaluate marketing performance using appropriate control techniques.	PO5, PO6	PSO3	PEO1, PEO4	Analyze, Evaluate (Moderate)
B.B.A. II Human Resource Management (Paper III)				
CO1: Develop and implement efficient processes for human resource planning, recruitment, selection, and training.	PO3, PO5	PSO3	PEO1, PEO4	Create, Apply (Moderate)
CO2: Design and manage career development programs and performance appraisal systems for employee motivation and growth.	PO3, PO5	PSO3	PEO3, PEO4	Create, Evaluate (Moderate)
CO3: Foster a positive work environment through effective leadership, communication, and conflict management.	PO4, PO7	PSO3	PEO2, PEO3	Apply, Evaluate (Moderate)
CO4: Understand and comply with legal and ethical considerations in human resource practices.	PO5, PO7	PSO3	PEO2, PEO4	Understand, Apply (Moderate)
CO5: Analyze the impact of human resource initiatives on organizational performance and profitability.	PO5, PO7	PSO3	PEO1, PEO4	Analyze, Evaluate (Moderate)
B.B.A. III Organizational Behavior (Paper I)				
CO1: Apply theoretical perspectives on organizational behavior to explain and predict individual and group dynamics within organizations.	PO5, PO7	PSO3	PEO1, PEO4	Apply, Evaluate (Moderate)
CO2: Understand the role of perception, personality, values, and attitudes in shaping individual behavior at work.	PO7	PSO3	PEO2, PEO4	Understand, Analyze (Moderate)
CO3: Analyze group dynamics, team development, and conflict resolution to enhance organizational effectiveness.	PO3, PO4	PSO3	PEO3, PEO4	Analyze, Apply (Moderate)

CO4: Recognize the importance of organizational change and development in adapting to competitive environments.	PO7	PSO4	PEO1, PEO4	Understand, Apply (Moderate)
CO5: Develop critical thinking and problem-solving skills to address human resource challenges in organizations.	PO5, PO7	PSO3	PEO1, PEO4	Create, Evaluate (Moderate)
B.B.A. III Indian Management Thought and Business Leaders (Paper II)				
CO1: Apply principles of Indian ethos and spirituality to business management practices for ethical and sustainable development.	PO7, PO10	PSO5	PEO2, PEO5	Apply, Evaluate (Moderate)
CO2: Analyze the philosophical insights of Indian epics like Bhagavad Gita and Ramayana in leadership and decision-making.	PO7	PSO5	PEO2, PEO4	Analyze, Evaluate (Moderate)
CO3: Evaluate the contributions of influential Indian thinkers like Swami Vivekananda, Mhatma Gandhi, and S.K. Chakarborty to management thought.	PO5	PSO5	PEO1, PEO4	Evaluate (Moderate)
CO4: Learn from the success stories and business strategies of iconic Indian business leaders like JRD Tata, Krishna Bala, and Dhirubhai Ambani.	PO5	PSO5	PEO1, PEO4	Understand, Analyze (Moderate)
CO5: Develop a critical understanding of contemporary Indian business leaders and their contributions to global economies.	PO7	PSO4	PEO1, PEO5	Analyze, Evaluate (Moderate)
B.B.A. III International Business (Paper III)				
CO1: Analyze the opportunities and challenges of entering and operating in the global marketplace.	PO5, PO7	PSO4	PEO1, PEO4	Analyze, Evaluate (Moderate)
CO2: Understand the impact of cultural, economic, political, and legal environment on international business decisions.	PO7	PSO4	PEO2, PEO4	Understand, Analyze (Moderate)

CO3: Evaluate different forms of international business organizations and choose appropriate entry strategies.	PO5	PSO4	PEO1, PEO4	Create, Evaluate (Moderate)
CO4: Apply international financial management principles to manage currency exchange risks and foreign investments.	PO5	PSO4	PEO1, PEO4	Apply, Evaluate (Moderate)
CO5: Develop effective strategies for global operations, supply chain management, and human resource practices in international businesses.	PO3, PO5	PSO4	PEO1, PEO4	Create, Evaluate (Moderate)

B.C.A. Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
BCA I	**Part-I Paper IOffice Management Tools**	Apply knowledge of computer hardware and software components to identify appropriate tools for	Utilize word processing software (MS Word) for document creation, editing, formatting, and	Create and manipulate spreadsheets (MS Excel) for data analysis, reporting, and visualization.	Design and deliver presentations (MS PowerPoint) effectively using multimedia elements and	Implement database management concepts (MS Access) for data storage, retrieval, and
BCA I	**Part-I Paper IIWeb Application Development**	Understand the fundamental principles of the internet and web technologies like HTML, CSS, and JavaScript.	Develop static web pages with proper HTML structure and basic CSS styling.	Apply Cascading Style Sheets (CSS) to enhance website appearance and layout with advanced techniques like Bootstrap.	Implement client-side scripting language (JavaScript) to add interactivity and dynamic behavior to web pages.	Understand the basics of content management systems (CMS) like Joomla or WordPress for website creation and maintenance.
BCA I	**Part-I Paper III Programming in C Language**	Write basic C programs using fundamental syntax, data types, operators, and control flow statements.	Design and implement functions to modularize code and improve program organization.	Understand and utilize pointers for memory management and data manipulation.	Define and work with user-defined data structures like arrays and structures.	Implement file handling operations to read and write data from external storage.
BCA I	**Part-I Paper III Computer Architecture**	Apply Boolean algebra and logic gates to design digital circuits for basic operations.	Understand the sequential logic concept and implement flip-flops for state retention and control.	Design and analyze arithmetic circuits (adders, subtractors) for efficient binary number manipulation.	Describe the basic organization and functionality of a central processing unit (CPU).	Explain memory hierarchy concepts and different types of memory in a computer system.
BCA I	**Part-I Paper IVOperating System**	Understand the role and functions of an operating system in managing computer resources.	Apply process management concepts like scheduling and synchronization to avoid deadlocks and optimize resource utilization.	Implement memory management techniques like paging and virtual memory to efficiently utilize main memory.	Design and manage file systems with appropriate data structures and allocation methods.	Understand the functionalities and basic principles of commonly used operating systems like Linux and Windows Server.
BCA I	**Part-II Paper I Basic Mathematics**	Master set operations, relations, and representations.	Analyze functions' domains, ranges, types, and logic applications.	Conquer matrix operations, transpose, determinants, and linear equations.	Master data analysis: frequency, central tendency, dispersion, correlation.	Understand and apply regression for relationship insights.
BCA II	**Part-II Paper IIBusiness Accounting**	Master the core principles of financial accounting, including its definition, scope, objectives, limitations, and ethical considerations.	Demonstrate proficiency in applying the double-entry system to record transactions, maintain ledgers, reconcile bank statements, and prepare accurate financial reports.	Analyze depreciation methods and calculate depreciation charges for various assets while understanding provisions, reserves, and error correction procedures.	Prepare final accounts, including opening and closing entries, trading and profit & loss accounts, and balance sheets, ensuring compliance with accounting standards.	Adjust final accounts for dividends, drawings, outstanding income and expenses, depreciation, taxes, and insurance claims following best practices.
BCA II	**Part-II Paper III Discrete Mathematics**	Comprehend and apply various number systems, including natural numbers, integers, rational and real numbers, complex numbers, and modular arithmetic, while adhering to ethical principles in problem-solving.	Master the binomial theorem and the principle of mathematical induction to analyze and solve complex mathematical problems with accuracy and reasoning.	Operate with sets, their types, and operations, understanding relations and their properties (reflexive, symmetric, anti-symmetric, transitive, equivalence, and partial order) with inclusivity and respect for diverse approaches.	Comprehend and apply logical principles, including propositions, logical operators, proof techniques, and quantifiers, to evaluate arguments and analyze complex relationships with a focus on critical thinking and problem-solving.	Utilize Boolean algebra and logic gates to simplify functions and design circuits while promoting efficient and responsible resource utilization.
BCA II	**Part-II Paper IV Operating Systems**	Explain the necessity and evolution of operating systems, analyzing factors like performance, protection, security, reliability, and interoperability, highlighting the importance of sustainability and environmental considerations.	Demonstrate understanding of device management, including I/O programming concepts, device controllers, drivers, and interrupt-driven I/O, emphasizing responsible device usage and data security.	Master process management concepts like scheduling, synchronization, inter-process communication, and multi-processor synchronization, prioritizing fair and efficient resource allocation and collaboration.	Analyze memory management techniques like fixed partitions, dynamic address relocation, swapping, virtual memory, and shared memory, promoting efficient memory utilization and responsible data handling.	Understand information management with files, directories, network security, and distributed computing principles, focusing on data privacy, access control, and responsible resource sharing.
BCA II	**BCA204: Data Base Management System**	Apply database management principles to model, design, and implement databases for real-world applications, ensuring data integrity and reliability.	Utilize Structured Query Language (SQL) effectively for data manipulation, retrieval, and modification, optimizing queries for performance and data security.	Implement normalization techniques to optimize database structures for efficient storage, retrieval, and update operations while minimizing redundancy.	Understand and apply transaction management concepts like concurrency control and ACID properties to ensure data consistency and integrity even in concurrent access scenarios.	Analyze and compare different database models, including relational, object-oriented, and distributed databases, selecting the appropriate model based on specific application requirements.
BCA II	**BCA205: Web Designing and Multimedia**	Design and develop user-friendly and accessible websites using HTML, CSS, and JavaScript, adhering to design principles and web accessibility standards.	Utilize multimedia elements like images, audio, and video to enhance user experience and engagement while considering responsible resource usage and file optimization.	Implement interactive features and dynamic content using JavaScript, including forms, animations, and event handling, while promoting user privacy and secure user interactions.	Understand web search engine optimization (SEO) principles and apply relevant techniques to improve website visibility and organic search ranking.	Utilize content management systems (CMS) like WordPress or Drupal to manage website content effectively and efficiently, ensuring user-friendliness and security.
BCA II	**BCA206 (A): Object Oriented Concepts (Through C++)**	Utilize various inheritance types (single, multiple, and hierarchical) to promote code reuse and extend existing functionalities while understanding the implications of virtual functions and dynamic binding.	Apply exception handling mechanisms to manage unexpected errors and exceptions gracefully, ensuring program stability and robustness.	Master advanced C++ features like templates, lambda expressions, and smart pointers for efficient code development and resource management.	Understand the principles of object-oriented design (OOD) methodologies like UML and use them to design scalable and maintainable software systems.	Develop object-oriented applications in C++ that demonstrate best practices in coding, debugging, and unit testing for reliable and efficient software solutions.
BCA III	**BCA III Paper I-Data Structures and Algorithms**	Analyze algorithm efficiency and apply algorithms	Implement fundamental linear data structures	Design and manipulate linked lists	Construct and traverse tree structures	Represent and traverse graphs, apply algorithms
BCA III	**System Design Concep**	Apply system development lifecycle models	Gather and analyze user requirements	:Design system components using modeling tools	Conduct comprehensive testing	Develop project plans and manage resources
BCA III	**Networking Technolog**	Distinguish between circuit and packet switching	Describe network protocols and technologies	Explain data encoding and error handling	Understand serial data formats	Discuss transmission media
BCA III	**Core Java Programmi**	Apply object-oriented programming concepts	Use Java language features	Develop GUIs	Implement multi-threaded applications	Establish network connectivity
BCA III	**E-Commerce**	Define and discuss e-commerce	Describe B2B e-commerce models	Explain electronic payment systems	Analyze e-commerce security risks	Discuss e-banking and M-Commerce
BCA III	**PHP Programming**	Write server-side scripts with PHP	Control program flow	Organize and manipulate data	Define and call functions, handle strings, and use regex	Process form data, manage cookies, and interact with databases

B.C.A. Program Summary Sheet

S.NO.	POs (Program Outcomes):	PSOs (Program Specific Outcomes):	PEOs (Program Educational Objectives):
PO1/PSO1/PEO1	PO1: Apply fundamental computing principles and programming skills to solve practical problems in various domains.	PSO1: Utilize office management tools for efficient productivity and communication tasks.	PEO1: Graduates will secure employment in various IT fields, including software development, web development, database administration, network administration, and e-commerce.
PO2/PSO2/PEO2	PO2: Design, develop, and maintain web applications using client-side and server-side technologies.	PSO2: Implement fundamental data structures and algorithms to optimize software performance.	PEO2: Graduates will demonstrate ethical and responsible behavior in their professional conduct and decision-making.
PO3/PSO3/PEO3	PO3: Manage and manipulate data effectively using database systems and query languages.	PSO3: Apply system design concepts to manage software projects effectively from requirements to testing.	PEO3: Graduates will adapt to evolving technologies and industry trends through continuous learning and professional development.
PO4/PSO4/PEO4	PO4: Demonstrate knowledge of computer networks and internet technologies to design and manage network infrastructure.	PSO4: Develop secure and ethical e-commerce solutions that address business needs and challenges.	PEO4: Graduates will effectively communicate technical concepts and ideas to diverse audiences, both verbally and in writing.
PO1/PSO1/PEO5	PO5: Apply object-oriented programming concepts to create modular, reusable, and maintainable software solutions.	PSO5: Create dynamic and interactive web pages using client-side scripting and server-side programming languages.	PEO5: Graduates will work collaboratively in teams to solve complex problems and achieve common goals.

Mapping of Course Outcomes of all courses of B.C.A.with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives				
Course Outcomes	**Program Outcomes**	**Program Specific Outcomes**	**Program Educational Objectives**	**Level**
Office Management Tools:				
CO1: Demonstrate proficiency in using common office management tools for document creation, data management, and presentations.	PO1	PSO1	PEO1, PEO5	Apply (Moderate)
CO2: Implement efficient communication strategies using email, calendar, and collaboration tools.	PO1	PSO1	PEO1, PEO2, PEO5	Understand (Moderate)
CO3: Apply digital security practices to protect data and information in office environments.	PO1	PSO1	PEO2, PEO3	Analyze (Moderate)
CO4: Design and develop professional-looking documents, presentations, and spreadsheets tailored to specific audiences.	PO1	PSO1	PEO1, PEO4	Create (Moderate)
CO5: Analyze and compare different office management tools to select the most appropriate solution for a given task.	PO1	PSO1	PEO3, PEO5	Evaluate (Moderate)
Web Application Development:				
CO1: Explain the fundamental concepts of web technologies, including HTML, CSS, and JavaScript.	PO2	PSO2, PSO5	PEO1, PEO3	Understand (Moderate)
CO2: Develop static web pages using HTML and CSS, applying best practices for accessibility and responsiveness.	PO2	PSO2, PSO5	PEO1, PEO4	Apply (Moderate)
CO3: Implement dynamic web interactions using JavaScript, including event handling and DOM manipulation.	PO2	PSO2, PSO5	PEO1, PEO3	Analyze (Moderate)
CO4: Integrate server-side technologies (e.g., PHP, Node.js) to create interactive web applications with database connectivity.	PO2	PSO2, PSO3	PEO1, PEO5	Apply (Moderate to High)
CO5: Evaluate and compare different web development frameworks and libraries to choose the most suitable option for a project.	PO2	PSO2, PSO3	PEO1, PEO3	Evaluate (Moderate)
Programming in C Language:				

CO1: Analyze and solve problems using fundamental programming concepts and algorithms.	PO1	PSO2	PEO1, PEO3	Analyze (Moderate)
CO2: Develop C programs using control structures, functions, and arrays to manipulate data effectively.	PO1, PO5	PSO2	PEO1, PEO3	Apply (Moderate)
CO3: Explain and apply pointers and structures to manage memory and organize data in C programs.	PO1, PO5	PSO2	PEO1, PEO3	Understand (Moderate)
CO4: Implement debugging techniques to identify and fix errors in C programs.	PO1, PO5	PSO2	PEO1, PEO3	Analyze (Moderate to High)
CO5: Compare and contrast different programming paradigms (e.g., procedural, object-oriented) and select the most appropriate for a specific task.	PO1, PO5	PSO2	PEO1, PEO3	Analyze (Moderate)
Computer Architecture:				
CO1: Describe the basic components and functionalities of a computer system.	PO1	PSO2	PEO1, PEO3	Understand (Moderate)
CO2: Analyze digital circuits and their operations using Boolean algebra and logic gates.	PO1	PSO2	PEO1, PEO3	Analyze (Moderate)
CO3: Explain the design and implementation principles of a central processing unit (CPU).	PO1	PSO2	PEO1, PEO3	Apply (Moderate to High)
CO4: Compare and contrast different memory organization techniques (e.g., cache, virtual memory).	PO1	PSO2	PEO1, PEO3	Analyze (Moderate)
CO5: Evaluate the performance implications of different computer architecture design choices.	PO1	PSO2	PEO1, PEO3	Evaluate (
Operating System:				
CO1: Explain the fundamental concepts and functions of operating systems.	PO1	PSO2	PEO1, PEO3	Understand (Moderate)
CO2: Analyze process management techniques, including scheduling, synchronization, and deadlock prevention.	PO1	PSO2	PEO1, PEO3	Analyze (Moderate)
CO3: Apply memory management techniques like paging, segmentation, and virtual memory to optimize resource utilization.	PO1	PSO2	PEO1, PEO3	Apply (Moderate to High)

CO4: Compare and contrast different file system structures and access methods.	PO1	PSO2	PEO1, PEO3	Analyze (Moderate)
CO5: Evaluate the performance and security implications of various operating system design choices.	PO1	PSO2	PEO1, PEO3	Evaluate (Moderate)
Basic Maths:				
CO1: Define and apply set operations (union, intersection, difference, complement) and Venn diagrams.	PO1	PSO2	PEO1, PEO3	Understand (Moderate)
CO2: Analyze and classify different types of relations (reflexive, symmetric, transitive) and functions (one-to-one, onto, bijective).	PO1	PSO2	PEO1, PEO3	Analyze (Moderate)
CO3: Apply matrix operations (addition, subtraction, multiplication, inverse) and solve systems of linear equations using various methods (e.g., Cramer's rule, Gaussian elimination).	PO1	PSO2	PEO1, PEO3	Apply (Moderate)
CO4: Calculate and interpret measures of central tendency (mean, median, mode) and dispersion (variance, standard deviation) for statistical data.	PO1	PSO2	PEO1, PEO3	Apply (Moderate)
CO5: Analyze and compare correlation coefficients (Pearson, Spearman) to assess the relationship between two variables.	PO1	PSO2	PEO1, PEO3	Analyze (Moderate)
BCAII Business Accounti				
CO1: Define and explain the fundamental concepts of financial accounting, including its scope, objectives, users, and limitations.	-	PSO1 (Supports)	PEO1, PEO3, PEO4	Understand (Moderate)
CO2: Apply the principles, concepts, and conventions of financial accounting to record and classify business transactions.	PO1, PO5	PSO1 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate)
CO3: Analyze and interpret various accounting records, including journals, ledgers, and trial balances.	PO1	PSO1 (Applies)	PEO1, PEO3, PEO4	Analyze (Moderate)

CO4: Prepare and interpret basic financial statements like the Trading Account, Profit and Loss Account, and Balance Sheet.	PO1, PO5	PSO1 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate)
CO5: Analyze and adjust final accounts for outstanding income and expenses, depreciation, and tax liabilities.	PO1	PSO1 (Applies)	PEO1, PEO3, PEO4	Analyze (Moderate)
Discrete Mathematics				
CO1: Explain and apply various number representation systems (decimal, binary) and perform conversions between them.	PO1	PSO2 (Applies)	PEO1, PEO3, PEO4	Understand (Moderate)
CO2: Apply the Binomial Theorem and Principle of Mathematical Induction to solve problems.	PO1	PSO2 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate)
CO3: Analyze and solve recurrence relations using generating functions.	PO1	PSO2 (Applies)	PEO1, PEO3, PEO4	Analyze (Moderate to High)
CO4: Define and perform operations on sets, including Venn diagrams and De Morgan's laws.	PO1	PSO2 (Applies)	PEO1, PEO3, PEO4	Understand (Moderate)
CO5: Analyze and classify different types of relations and functions.	PO1	PSO2 (Applies)	PEO1, PEO3, PEO4	Analyze (Moderate)
Operating System:				
CO1: Explain the fundamental functionalities and design principles of operating systems.	PO1	PSO2, PSO3 (Supports)	PEO1, PEO3, PEO4	Understand (Moderate)
CO2: Analyze process management techniques like scheduling, synchronization, and deadlock prevention.	PO1	PSO2, PSO3 (Applies)	PEO1, PEO3, PEO4	Analyze (Moderate)
CO3: Apply memory management techniques (paging, segmentation, virtual memory) to optimize resource utilization.	PO1	PSO2, PSO3 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate to High)
Database Management System:				
CO1: Define and Explain the fundamental concepts of database systems, including architecture, schemas, instances, and data independence.	PO1	PSO3 (Supports)	PEO1, PEO3, PEO4	Understand (Moderate)
CO2: Apply the Entity-Relationship model to design and represent database systems.	PO1	PSO3 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate)

CO3: Analyze and understand relational algebra operations and their implementation.	PO1, PO3	PSO3 (Applies)	PEO1, PEO3, PEO4	Analyze (Moderate)
CO4: Apply normalization techniques to ensure data integrity and minimize redundancy in databases.	PO1, PO3	PSO3 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate to High)
CO5: Understand and explain transaction management concepts like atomicity, consistency, isolation, and durability (ACID).	PO1	PSO3 (Applies)	PEO1, PEO3, PEO4	Understand (Moderate)
Object Oriented Concepts (Through C++)				
CO1.Identify, define, and explain fundamental object-oriented programming concepts like classes, objects, inheritance, polymorphism, and encapsulation.	PO1, PO5	PSO2, PSO5 (Supports)	PEO1, PEO3, PEO4	Understand (Moderate)
CO2: Apply object-oriented principles to design, develop, and implement modular and reusable software solutions.	PO1, PO5	PSO2, PSO3, PSO5 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate to High)
CO3: Utilize data structures (arrays, linked lists, trees) and algorithms (searching, sorting) effectively within object-oriented programs.	PO1, PO5	PSO2, PSO3, PSO5 (Applies)	PEO1, PEO3, PEO4	Apply (Moderate to High)
CO4: Understand and apply advanced object-oriented concepts like exception handling, operator overloading, and templates.	PO1, PO5	PSO2, PSO3, PSO5 (Applies)	PEO1, PEO3, PEO4	Analyze (Moderate to High)
BCA III Data Structures and Algorithms				
Analyze algorithm efficiency and apply algorithms	PO1, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Analyze (Moderate)
Implement fundamental linear data structures	PO1, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Design and manipulate linked lists	PO1, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Create (Moderate)
Construct and traverse tree structures	PO1, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Create (Moderate)
Represent and traverse graphs, apply algorithms	PO1, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Analyze (Moderate)
System Design Concepts				
Apply system development lifecycle models	PO1, PO2, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Gather and analyze user requirements	PO1, PO2, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Analyze (Moderate)
:Design system components using modeling tools	PO1, PO2, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Create (Moderate)
Conduct comprehensive testing	PO1, PO2, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Analyze (Moderate)
Develop project plans and manage resources	PO1, PO2, PO5	PSO1	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)

Networking Technologies				
Distinguish between circuit and packet switching	PO1, PO3	PSO4	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Describe network protocols and technologies	PO1, PO3	PSO4	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Explain data encoding and error handling	PO1, PO3	PSO4	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Understand serial data formats	PO1, PO3	PSO4	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Discuss transmission media	PO1, PO3	PSO4	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Core Java Programming				
Apply object-oriented programming concepts	PO1, PO5	PSO2	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Use Java language features	PO1, PO5	PSO2	PEO1, PEO2, PEO3, PEO5	Apply (Moderate
Develop GUIs	PO1, PO2, PO5	PSO2	PEO1, PEO2, PEO3, PEO5	Create (Moderate)
Implement multi-threaded applications	PO1, PO3, PO5	PSO2	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Establish network connectivity	PO1, PO3, PO5	PSO2	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
E-Commerce				
Define and discuss e-commerce	PO1, PO2, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Describe B2B e-commerce models	PO1, PO2, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Explain electronic payment systems	PO1, PO2, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
Analyze e-commerce security risks	PO1, PO2, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Analyze (Moderate)
Discuss e-banking and M-Commerce	PO1, PO2, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Understand (Moderate)
PHP Programming				
Write server-side scripts with PHP	PO1, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Control program flow	PO1, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Organize and manipulate data	PO1, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Define and call functions, handle strings, and use regex	PO1, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)
Process form data, manage cookies, and interact with databases	PO1, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Apply (Moderate)

B.Com. B.Adm. Course Outcomes Summary Sheet						
Course	**Title**	**Course OutcomePart-I**	**Course OutcomePart-II**	**Course OutcomePart-III**	**Course Outcome 4**	**Course Outcome 5**
B.ComPart-I B.Adm.	Paper I - Business Law	1. Apply legal principles to analyze and solve business-related legal issues.	2. Critically evaluate the legal framework for contracts, sales, partnerships, and consumer protection in India.	3. Develop effective communication skills to explain complex legal concepts and arguments.	4. Conduct legal research to stay informed about current legislation, case law, and amendments.	5. Demonstrate ethical and professional conduct when applying legal knowledge and principles.
B.ComPart-I B.Adm.	Paper II - Entrepreneurship and Small Business Management	1. Identify and evaluate entrepreneurial opportunities.	2. Develop a comprehensive business plan for a small business venture.	3. Access and utilize financial resources to support the establishment and growth of a small business.	4. Build effective networks and relationships with stakeholders.	5. Contribute to the economic and social development of the local community.
B.ComPart-II B.Adm.	Paper I - Company Law and Secretarial Practice	1. Advise on company formation and compliance with legal and regulatory requirements.	2. Draft and maintain essential company documents.	3. Effectively manage share capital and debentures.	4. Fulfill the duties and responsibilities of a company secretary.	5. Identify and mitigate legal risks associated with company operations.
B.ComPart-II B.Adm.	Paper II - Management	1. Apply management principles and practices to plan, organize, lead, and control organizational activities.	2. Analyze and evaluate organizational structures and processes.	3. Make informed decisions based on critical thinking and data analysis.	4. Communicate effectively with team members.	5. Demonstrate ethical leadership and make responsible decisions.
B.ComPart-III B.Adm.	Paper I - Functional Management	1. Apply HRM principles and practices to attract, retain, and develop a workforce.	2. Design and implement marketing strategies.	3. Make sound financial decisions based on financial analysis and planning tools.	4. Optimize production and materials management processes.	5. Integrate knowledge of different functional areas to solve complex business problems.
B.ComPart-III B.Adm.	Paper II - Advertising and Sales Management	1. Develop and implement creative and persuasive advertising campaigns that effectively communicate brand messages and achieve marketing goals.	2. Analyze and evaluate the effectiveness of advertising and sales campaigns using relevant metrics and data.	3. Build strong relationships with customers through effective sales techniques and communication strategies.	4. Negotiate and close deals to achieve sales targets and contribute to organizational revenue growth.	5. Maintain ethical standards in advertising and sales practices, ensuring fair and responsible interactions with customers and competitors.

B.Com. B.Adm. Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	**1. Problem-solving:** Analyze and solve complex business-related legal and organizational problems using appropriate legal and business frameworks.	**1. Advise on business formation and compliance:** Graduates will advise on and ensure compliance with legal and regulatory requirements for business entities, adhering to corporate governance principles.	**1. Apply legal and business knowledge:** Graduates will effectively apply legal and business principles to analyze, solve, and navigate complex business issues in various professional settings.
PO2/PSO2/PEO2	**2. Critical thinking:** Critically evaluate legal and business frameworks, identify opportunities and challenges, and propose effective solutions.	**2. Develop and manage business ventures:** Graduates will develop comprehensive business plans, access financial resources, and manage small business operations effectively.	**2. Demonstrate ethical and professional conduct:** Graduates will uphold ethical standards and professional conduct in their business endeavors, promoting social responsibility and integrity.
PO3/PSO3/PEO3	**3. Communication:** Communicate legal and business information effectively, both orally and in writing, to diverse audiences and stakeholders.	**3. Perform company secretarial duties:** Graduates will accurately fulfill the duties and responsibilities of a company secretary, including drafting documents, managing capital, and mitigating legal risks.	**3. Engage in continuous learning and adaptation:** Graduates will possess the ability to continuously learn, adapt to changing environments, and stay informed about evolving legal and business landscapes.
PO4/PSO4/PEO4	**4. Information technology:** Utilize technology tools and resources for legal research, business planning, and data analysis.	**4. Apply management principles:** Graduates will effectively apply management principles and practices to plan, organize, lead, and control organizational activities.	**4. Contribute to sustainable and responsible business practices:** Graduates will contribute to the economic and social development of communities through sustainable and responsible business practices.
PO5/PSO5/PEO5	**5. Professionalism and ethics:** Adhere to legal and ethical standards, demonstrate professional conduct, and promote social responsibility in business practices.	**5. Integrate functional knowledge:** Graduates will integrate knowledge from different functional areas like HRM, marketing, finance, and production to solve complex business problems and make informed decisions.	**5. Communicate effectively:** Graduates will effectively communicate legal and business concepts, arguments, and information to diverse audiences, both orally and in writing.

Mapping of Course Outcomes of all courses of B.Sc. Mathematics with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
B.Com Part-I Paper I - Business Law (B.Adm.)				
1. Apply legal principles to solve business-related legal issues.	PO 1, PO 2, PO 3	PSO 1	PEO 1, PEO 2, PEO 5	Apply (Medium)
2. Critically evaluate the legal framework for business in India.	PO 2, PO 4	PSO 1	PEO 1, PEO 3, PEO 5	Analyze (Medium)
3. Develop effective communication skills for legal concepts.	PO 3, PO 5	PSO 1,PSO 2	PEO 3, PEO 5	Communicate (Medium)
4. Conduct legal research.	PO 4, PO 5	PSO 1	PEO 1, PEO 4, PEO 5	Analyze (Medium)
5. Demonstrate ethical conduct in business situations.	PO 5	PSO 1,PSO 2	PEO 2, PEO 5	Evaluate (Medium)
B.Com Part-I Paper-II - Entrepreneurship and Small Business Management				
1. Identify and evaluate entrepreneurial opportunities.	PO 1, PO 2	PSO 2	PEO 1, PEO 4, PEO 5	Analyze (Medium)
2. Develop a comprehensive business plan.	PO 1, PO 3, PO 4	PSO 2	PEO 1, PEO 3, PEO 5	Apply (Medium)
3. Access and utilize financial resources.	PO 1, PO 4	PSO 2	PEO 1, PEO 4, PEO 5	Apply (Medium)
4. Build effective networks and relationships.	PO 3, PO 5	PSO 2	PEO 3, PEO 5	Communicate (Medium)
5. Contribute to economic and social development.	PO 5	PSO 2	PEO 1, PEO 5	Evaluate (Medium)
B.Com Part-II Paper-I - Company Law and Secretarial Practice				
1. Advise on company formation and compliance.	PO 1, PO 2, PO 5	PSO 3	PEO 1, PEO 2, PEO 5	Apply (Medium)
2. Draft and maintain company documents.	PO 1, PO 3	PSO 3	PEO 1, PEO 3, PEO 5	Apply (Medium)
3. Effectively manage share capital and debentures.	PO 1, PO 2	PSO 3	PEO 1, PEO 5	Apply (Medium)
4. Fulfill duties and responsibilities of a company secretary.	PO 1, PO 3, PO 5	PSO 3	PEO 1, PEO 2, PEO 5	Apply (Medium)
5. Identify and mitigate legal risks.	PO 1, PO 2	PSO 3	PEO 1, PEO 2, PEO 5	Analyze (Medium)
B.Com Part-II Paper II - Management				
1. Apply management principles and practices.	PO 1, PO 2	-	PEO 1, PEO 3, PEO 5	Apply (Medium)
2. Analyze and evaluate organizational structures and processes.	PO 1, PO 2, PO 4	-	PEO 1, PEO 3, PEO 5	Analyze (Medium)
3. Make informed decisions.	PO 1, PO 2, PO 4	-	PEO 1, PEO 3, PEO 5	Analyze (Medium)
4. Communicate effectively with team members.	PO 3, PO 5	-	PEO 3, PEO 5	Communicate (Medium)
5. Demonstrate ethical leadership.	PO 5	-	PEO 1, PEO 2, PEO 5	Evaluate (Medium)
B.Com Part-III Paper-I - Functional Management				
1. Apply HRM principles and practices.	PO 1, PO 3, PO 5	PSO 4	PEO 1, PEO 3, PEO 5	Apply (Medium)
2. Design and implement marketing strategies.	PO 1, PO 3, PO 4	PSO 4	PEO 1, PEO 3, PEO 5	Apply (Medium)
3. Make sound financial decisions.	PO 1, PO 2, PO 4	PSO 4	PEO 1, PEO 3, PEO 5	Analyze (Medium)
4. Optimize production and materials management processes.	PO 1, PO 2	PSO 4	PEO 1, PEO 3, PEO 5	Apply (Medium)
5. Integrate knowledge of different functional areas.	PO 1, PO 2, PO 4	PSO 4	PEO 1, PEO 3, PEO 5	Analyze (Medium)
B.Com Part-III Paper-II - Advertising and Sales Management				
1. Develop and implement creative advertising campaigns.	PO 1, PO 3, PO 4	PSO 5	PEO 1, PEO 3, PEO 5	Apply (Medium)
2. Analyze and evaluate advertising and sales campaigns.	PO 1, PO 2, PO 4	PSO 5	PEO 1, PEO 3, PEO 5	Analyze (Medium)
3. Build strong relationships with customers.	PO 3, PO 5	PSO 5	PEO 3, PEO 5	Communicate (Medium)
4. Negotiate and close deals.	PO 1, PO 3, PO 5	PSO 5	PEO 1, PEO 3, PEO 5	Apply (Medium)
5. Maintain ethical standards in advertising and sales.	PO 5	PSO 5	PEO 2, PEO 5	Evaluate (Medium)

B.Com. ABST Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.Com 1 ABST	Paper 1 - Corporate and Financial Accounting	Apply accounting principles to record, classify, and summarize financial transactions of a company.	Analyze and interpret financial statements to assess the financial performance and position of a company.	Make informed decisions regarding the issuance, redemption, and valuation of shares and debentures.	Prepare final accounts of companies in accordance with accounting standards and regulatory requirements.	Apply accounting principles to specific transactions such as hire purchase, installment sale, and insurance claims.
B.Com 1 ABST	Paper 2 - Business Statistics	Organize and present data effectively using appropriate methods of classification and tabulation.	Calculate and interpret measures of central tendency to understand the typical value of a data set.	Analyze the variability of data using measures of dispersion and identify potential outliers.	Apply correlation and simple linear regression to assess the relationship between two variables.	Construct and interpret index numbers to measure changes in economic variables over time.
B.Com 2 ABST	Paper 1 - Income Tax	Determine an individual's residential status and calculate taxable income from various sources (salary, house property, business, capital gains, etc.).	Apply relevant provisions of the Income Tax Act to claim deductions and carry forward losses for individuals.	Calculate tax liability and complete assessment procedures for individuals, Hindu undivided families, and firms.	Understand the role of advance tax and TDS in income tax compliance.	Stay updated on recent amendments and developments in income tax laws.
B.Com 2 ABST	Paper 2 - Cost Accounting	Calculate and analyze various cost components (material, labor, overhead) for different costing methods.	Apply appropriate costing techniques (unit costing, operating costing, job costing, contract costing, process costing) based on the business scenario.	Analyze cost behavior and cost-volume-profit relationships using marginal costing techniques.	Develop and use standard cost systems to control and track variances from planned costs.	Evaluate the effectiveness of cost accounting techniques for decision-making purposes.
B.Com 3 ABST	Paper 1 - Auditing and Management Accounting	Evaluate the effectiveness of internal control systems and design audit programs to assess financial statement accuracy.	Perform various audit procedures including vouching, verification, and valuation of assets and liabilities.	Understand the responsibilities and conduct of company auditors as per regulatory requirements.	Analyze the capital structure and leverage of a company to assess its financial risk.	Conduct financial statement analysis and ratio analysis to evaluate a company's financial health and performance.
B.Com 3 ABST	Paper 2 - Goods and Service Tax (GST)	Classify transactions under GST as taxable, exempt, or nil-rated, and determine the applicable tax rates (CGST, SGST, IGST).	Calculate input tax credit (ITC) and understand its significance in tax optimization.	Complete GST registration and filing procedures accurately and timely.	Calculate and pay GST dues as per applicable provisions.	Understand the legal framework and administrative procedures related to GST compliance and offenses.

B.Com. ABST Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	**Problem-solving:** Analyze and solve complex accounting and financial problems using appropriate techniques and tools.	Analyze and interpret financial statements to assess the financial performance and position of a company.	Apply accounting, taxation, and financial analysis principles to solve real-world business problems.
PO2/PSO2/PEO2	**Critical thinking:** Evaluate and interpret financial information critically to draw meaningful conclusions.	Prepare and file income tax returns for individuals and businesses in accordance with tax laws and regulations.	Demonstrate ethical and professional conduct while adhering to legal and regulatory requirements in the accounting and finance field.
PO3/PSO3/PEO3	**Communication:** Communicat e financial information effectively to various stakeholders, both orally and in writing.	Apply cost accounting techniques to optimize costs and make informed business decisions.	Effectively communicate financial information and analysis to stakeholders using various communication tools.
PO4/PSO4/PEO4	**Information technology:** Utilize technology tools and applications for accounting, taxation, and financial analysis tasks.	Perform audit procedures and evaluate the effectiveness of internal control systems.	Continuously learn and adapt to the evolving business and technological landscape within the accounting and finance profession.
PO5/PSO5/PEO5	**Professionalism and ethics:** Adhere to ethical principles, professional standards, and legal requirements in the accounting and finance profession.	Classify transactions under GST, calculate GST dues, and comply with GST regulations.	Contribute positively to the organization and society by upholding ethical values and social responsibility.

Mapping of Course Outcomes of all courses of B.Com. ABST with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
B.Com. Part-I ABST- 1 - Corporate and Financial Accounting				
1. Apply accounting principles to record, classify, and summarize financial transactions of a company.	PO 1, PO 5	PSO 1	PEO 1, PEO 2	Apply (Medium)
2. Analyze and interpret financial statements to assess the financial performance and position of a company.	PO 1, PO 2, PO 3	PSO 1	PEO 1, PEO 2, PEO 3	Analyze (Medium)
3. Make informed decisions regarding the issuance, redemption, and valuation of shares and debentures.	PO 1, PO 2, PO 3	PSO 1	PEO 1, PEO 2, PEO 3	Evaluate (Medium)
4. Prepare final accounts of companies in accordance with accounting standards and regulatory requirements.	PO 1, PO 5	PSO 1	PEO 1, PEO 2	Apply (Medium)
5. Apply accounting principles to specific transactions such as hire purchase, installment sale, and insurance claims.	PO 1, PO 5	PSO 1	PEO 1, PEO 2	Apply (Medium)
B.Com. Part-I ABST-2 - Business Statistics				
1. Organize and present data effectively using appropriate methods of classification and tabulation.	PO 3, PO 4	PSO 1,PSO2	PEO 1, PEO 2	Apply (Medium)
2. Calculate and interpret measures of central tendency to understand the typical value of a data set.	PO 1, PO 2	PSO 1,PSO2	PEO 1, PEO 3	Analyze (Low)
3. Analyze the variability of data using measures of dispersion and identify potential outliers.	PO 1, PO 2	PSO2	PEO 1, PEO 3	Analyze (Medium)
4. Apply correlation and simple linear regression to assess the relationship between two variables.	PO 1, PO 2	PSO2	PEO 1, PEO 3	Analyze (Medium)
5. Construct and interpret index numbers to measure changes in economic variables over time.	PO 1, PO 2, PO 3	PSO2	PEO 1, PEO 3	Apply (Medium)
B.Com.Part-II ABST-1 - Income Tax				
1. Determine an individual's residential status and calculate taxable income from various sources (salary, house property, business, capital gains, etc.).	PO 1, PO 2	PSO 2	PEO 1, PEO 2	Understand (Low)
2. Apply relevant provisions of the Income Tax Act to claim deductions and carry forward losses for individuals.	PO 1, PO 5	PSO 2	PEO 1, PEO 2	Apply (Medium)
3. Calculate tax liability and complete assessment procedures for individuals, Hindu undivided families, and firms.	PO 1, PO 5	PSO 2	PEO 1, PEO 2	Apply (Medium)
4. Understand the role of advance tax and TDS in income tax compliance.	PO 2	PSO 2	PEO 1, PEO 2	Understand (Low)
5. Stay updated on recent amendments and developments in income tax laws.	PO 4, PO 5	PSO 2, PSO3	PEO 1, PEO 4	Understand (Low)
B.Com.Part-II ABST-2 - Cost Accounting				
1. Calculate and analyze various cost components (material, labor, overhead) for different costing methods.	PO 1, PO 2	PSO2, PSO 3	PEO 1, PEO 4	Analyze (Medium)
2. Apply appropriate costing techniques (unit costing, operating costing, job costing, contract costing, process costing) based on the business scenario.	PO 1, PO 2	PSO2, PSO 3	PEO 1, PEO 3	Analyze (Medium)

3. Analyze cost behavior and cost-volume-profit relationships using marginal costing techniques.	PO 1, PO 2	PSO2, PSO 3	PEO 1, PEO 3	Analyze (Medium)
4. Develop and use standard cost systems to control and track variances from planned costs.	PO 1, PO 5	PSO 3	PEO 1, PEO 2, PEO 3	Evaluate (Medium)
5. Evaluate the effectiveness of cost accounting techniques for decision-making purposes.				Evaluate (Medium)
B.Com.Part-III ABST-1- Auditing and Management Accounting				
1. Evaluate the effectiveness of internal control systems and design audit programs to assess financial statement accuracy.	PO 1, PO 2, PO 5	PSO 4	PEO 1, PEO 2, PEO 3	Evaluate (Medium)
2. Perform various audit procedures including vouching, verification, and valuation of assets and liabilities.	PO 1, PO 5	PSO 4	PEO 1, PEO 2	Apply (Medium)
3. Understand the responsibilities and conduct of company auditors as per regulatory requirements.	PO 2, PO 5	-	PEO 1, PEO 2	Understand (Low)
4. Analyze the capital structure and leverage of a company to assess its financial risk.	PO 1, PO 2	PSO 1	PEO 1, PEO 3	Analyze (Medium)
5. Conduct financial statement analysis and ratio analysis to evaluate a company's financial health and performance.	PO 1, PO 2, PO 3	PSO 1	PEO 1, PEO 2, PEO 3	Analyze (Medium)
B.Com.Part-III ABST- 2 - Goods and Service Tax (GST)				
1. Classify transactions under GST as taxable, exempt, or nil-rated, and determine the applicable tax rates (CGST, SGST, IGST).	PO 1, PO 2	PSO 5	PEO 1, PEO 2, PEO 3	Apply (High)
2. Calculate input tax credit (ITC) and understand its significance in tax optimization.	PO 1, PO 2	PSO 5	PEO 1, PEO 3	Analyze (Medium)
3. Complete GST registration and filing procedures accurately and timely.	PO 1, PO 5	PSO 5	PEO 1, PEO 2	Apply (Low)
4. Calculate and pay GST dues as per applicable provisions.	PO 1, PO 5	PSO 5	PEO 1, PEO 2	Apply (Medium)
5. Understand the legal framework and administrative procedures related to GST compliance and offenses.	PO 2	PSO 5	PEO 1, PEO 2	Understand (Low)

B.Com. EAFM. Course Outcomes Summary Sheet						
Course	**Title**	**Course Outcome 1**	**Course Outcome 2**	**Course Outcome 3**	**Course Outcome 4**	**Course Outcome 5**
B.Com 1st	EAFM-I - Business Economics	1. Analyze the role of business economics in decision-making	2. Apply consumer behavior theories	3. Evaluate production functions and cost-revenue relationships	4. Explain market structures and their impact	5. Analyze business cycles and their impact on the economy
B.Com 1st	EAFM-2nd Indian Banking and Financial System	1. Explain the structure and functions of the Indian banking system	2. Analyze negotiable instruments and their legal implications	3. Evaluate the financial system and recent reforms	4. Describe money and capital markets and their role	5. Analyze challenges and opportunities of rural finance
B.Com 2nd	EAFM-1 - Economic Environment in Rajasthan	1. Analyze key economic features of Rajasthan and its position	2. Evaluate the impact of government policies and programs	3. Assess infrastructure development and its role in growth	4. Analyze challenges and opportunities of tourism and industrial development	5. Evaluate the role of financial inclusion and microfinance
B.Com 2nd	EAFM II - Elements of Financial Management	1. Analyze the role of a financial manager	2. Apply financial analysis techniques	3. Evaluate sources of financing and develop capital structures	4. Implement working capital management strategies	5. Analyze capital budgeting techniques
B.Com 3rd	EAFM-1 - Rural Development and Co-operation (cont.)	1. Analyze the concept, significance, and strategies for rural development in India.	Evaluate the role of Panchayati Raj institutions in rural governance and development	3. Assess the impact of government programs like NREGA and MGNREGA	4. Analyze the role of cooperatives in rural development	5. Evaluate challenges and opportunities of sustainable rural development
B.Com 3rd	EAFM II - Business Budgeting	1. Develop and implement effective budgets	2. Apply forecasting techniques	3. Prepare and manage cash budgets	4. Implement budgetary control systems	5. Analyze product and production decisions

B.Com. EAFM. Program Summary Sheet:

Program Outcomes (POs):	Program Student Outcomes (PSOs):	Program Educational Objectives (PEOs):
1. Apply economic principles and analytical tools to solve business problems. (e.g., analyzing market structures, evaluating cost-revenue relationships)	**1. Demonstrate critical thinking and problem-solving skills in an economic and financial context.**	**1. Graduates will be competent professionals in the field of economics and finance, capable of applying their knowledge to solve real-world business problems.**
2. Evaluate the Indian financial system and its impact on businesses and individuals. (e.g., understanding banking regulations, analyzing financial markets)	**2. Effectively communicate economic and financial information to stakeholders.**	**2. Graduates will be ethical and responsible citizens, contributing to the sustainable development of India, particularly in rural areas.**
3. Assess the economic environment of Rajasthan and its implications for different sectors. (e.g., evaluating government policies, analyzing tourism challenges)	**3. Adapt to changing economic and financial environments and regulations.**	**3. Graduates will be lifelong learners, adapting their skills and knowledge to the evolving economic and financial landscape.**
4. Implement effective financial management strategies for businesses. (e.g., capital budgeting, working capital management)	**4. Contribute ethically and responsibly to economic development initiatives.**	**4. Graduates will be effective communicators and collaborators, able to work in diverse teams and environments.**
5. Analyze and contribute to the development of rural India through sustainable strategies. (e.g., understanding rural development programs, promoting cooperatives)	**5. Utilize technology effectively for financial analysis and decision-making.**	**5. Graduates will be committed to professional and personal growth, continuously seeking opportunities to improve their skills and knowledge.**

Mapping of Course Outcomes of all courses of B.Com. ABST with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcome (CO)	Mapped PEOs	Mapped PSOs	Mapped POs	Bloom's Taxonomy Level & Difficulty Level
B.Com 1st EAFM-I - Business Economics				
1. Analyze the role of business economics in decision-making	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
2. Apply consumer behavior theories	PEO 1, PEO 3		PO 1, PO 3	Apply (Medium)
3. Evaluate production functions and cost-revenue relationships	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
4. Explain market structures and their impact	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
5. Analyze business cycles and their impact on the economy	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
B.Com 1st EAFM-2nd Indian Banking and Financial System				
1. Explain the structure and functions of the Indian banking system	PEO 1, PEO 3	PSO 1	PO 1, PO 3	Analyze (Medium)
2. Analyze negotiable instruments and their legal implications	PEO 1, PEO 3, PEO 5	PSO 1	PO 1, PO 3, PO 5	Analyze (Medium)
3. Evaluate the financial system and recent reforms	PEO 1, PEO 3	PSO 1	PO 1, PO 3	Analyze (Medium)
4. Describe money and capital markets and their role	PEO 1, PEO 3	PSO 1	PO 1, PO 3	Analyze (Medium)
5. Analyze challenges and opportunities of rural finance	PEO 1, PEO 3, PEO 5	PSO 1	PO 1, PO 3, PO 5	Analyze (Medium)
B.Com 2nd EAFM-1 - Economic Environment in Rajasthan				
1. Analyze key economic features of Rajasthan and its position	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
2. Evaluate the impact of government policies and programs	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
3. Assess infrastructure development and its role in growth	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
4. Analyze challenges and opportunities of tourism and industrial development	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
5. Evaluate the role of	PEO 1, PEO 3, PEO 5		PO 1, PO 3, PO 5	Analyze (Medium)
B.Com 2nd EAFM II - Elements of Financial Management				
1. Analyze the role of a financial manager	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Analyze (Medium)
2. Apply financial analysis techniques	PEO 1, PEO 3,	PSO 2	PO 1, PO 3	Apply (Medium)
3. Evaluate sources of financing and develop capital structures	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Analyze (Medium)

4. Implement working capital management strategies	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Apply (Medium)
5. Analyze capital budgeting techniques	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Analyze (Medium)
B.Com 3rd EAFM-1 - Rural Development and Co-operation				
1. Analyze the concept, significance, and strategies for rural development in India.	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
Evaluate the role of Panchayati Raj institutions in rural governance and development	PEO 1, PEO 3		PO 1, PO 3	Apply (High)
3. Assess the impact of government programs like NREGA and MGNREGA	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
4. Analyze the role of cooperatives in rural development	PEO 1, PEO 3		PO 1, PO 3	Analyze (Medium)
5. Evaluate challenges and opportunities of sustainable rural development	PEO 1, PEO 3, PEO 5		PO 1, PO 3, PO 5	Analyze (Medium)
B.Com 3rd EAFM II - Business Budgeting				
1. Develop and implement effective budgets	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Apply (Medium)
2. Apply forecasting techniques	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Apply (Medium)
3. Prepare and manage cash budgets	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Apply (Medium)
4. Implement budgetary control systems	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Apply (Medium)
5. Analyze product and production decisions	PEO 1, PEO 3	PSO 2	PO 1, PO 3	Analyze (Medium)

B.A. English Literature Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.A. Part- I English Literature	I(Poetry and Drama)	Analyze major themes and stylistic elements of Renaissance, Elizabethan, Metaphysical, and Restoration literature.	Interpret and critically evaluate select poems by specified authors.	Understand and apply literary devices in poetry analysis.	Analyze dramatic structure and character development in Shakespeare's "The Merchant of Venice".	Demonstrate understanding of historical and cultural contexts.
B.A. Part- I English Literature	II(Prose and Fiction)	Critically evaluate philosophical and ethical arguments in specified texts.	Analyze narrative techniques and themes in short stories by specified authors.	Understand and differentiate between narration types and literary forms.	Analyze social and cultural context of Dickens' "Oliver Twist".	Demonstrate effective communication skills through written and oral expression.
B.A. Part- II English Literature	I(Poetry and Drama)	Analyze Romantic themes and poetic techniques of specified authors.	Interpret and critically evaluate poems by specified authors.	Analyze development of post-colonial Indian poetry through specified texts.	Analyze dramatic themes and techniques in specified plays.	Demonstrate understanding of the relationship between literature and society.
B.A. Part- II English Literature	II(Prose and Fiction)	Analyze philosophical and spiritual insights in specified texts.	Understand and apply critical reading strategies from specified texts.	Analyze themes and narrative techniques in short stories by specified authors.	Analyze symbolism and psychological themes in "Lord of the Flies".	Demonstrate ability to conduct independent research on literary topics.
B.A. Part- III English Literature	I(Poetry and Drama)	Analyze Victorian and Modern themes and poetic techniques of specified authors.	Interpret and critically evaluate poems by specified authors (including Indian and global poets).	Analyze themes and dramatic techniques in specified plays.	Demonstrate understanding of the global context of literature.	Communicate literary insights effectively through creative writing.
B.A. Part- III English Literature	II(Prose and Fiction)	Analyze social and political themes in specified novels.	Analyze feminist themes and narrative techniques in short stories by specified authors.	Analyze cultural and psychological themes in specified novels.	Demonstrate mastery of various writing skills.	Demonstrate awareness of contemporary literary trends and issues.

B.A. English Literature Program Summary Sheet

S.NO.	Program Outcomes (POs)	Program Specific Outcomes (PSOs)	Program Education Objectives (PEOs)
PO1/PSO1/PEO1	Demonstrate strong critical thinking and analytical skills in the interpretation and evaluation of literary texts.	Analyze and interpret major literary movements, periods, and genres from the Renaissance to the present day.	Graduates will be able to use their critical thinking and analytical skills to succeed in a variety of professional and academic settings.
PO2/PSO2/PEO2	Communicate effectively in writing and orally, using appropriate language and rhetorical strategies for different audiences and purposes.	Closely read and critically evaluate a variety of literary texts, including poetry, drama, fiction, and non-fiction.	Graduates will be able to communicate effectively in writing and orally, contributing positively to their communities and workplaces.
PO3/PSO3/PEO3	Conduct independent research on literary topics, critically evaluate sources, and synthesize information effectively.	Apply critical thinking skills to analyze the relationship between literature and society, exploring themes such as power, gender, identity, and class.	Graduates will be able to continue learning independently and engage in lifelong intellectual exploration.
PO4/PSO4/PEO4	Develop an understanding of the historical, cultural, and social contexts of literature.	Develop strong research and writing skills, including the ability to conduct independent research, write effectively in different genres, and present findings clearly and concisely.	Graduates will be able to think critically about the world around them and understand the role of literature in shaping human experience.
PO1/PSO1/PEO5	Appreciate the diversity and richness of literary traditions from around the world.	Demonstrate an awareness of the global context of literature and its ability to challenge and shape our understanding of the world.	Graduates will be able to appreciate the diversity and richness of human cultures and contribute to a more just and equitable world.

Mapping of Course Outcomes of all courses of B.A.English Literature with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives				
Course Outcomes	**Program Outcomes**	**Program Specific Outcomes**	**Program Educational Objectives**	**Level**
B.A. Part- I English Literature I (Poetry and Drama)				
Analyze major themes and stylistic elements of Renaissance, Elizabethan, Metaphysical, and Restoration literature.	PO1, PO4, PO5	PSO1	PEO1, PEO4	Analyze (Analyze) - Medium
Interpret and critically evaluate select poems by specified authors.	PO1, PO2	PSO2	PEO1, PEO4	Interpret/Evaluate (Evaluate) - High
Understand and apply literary devices in poetry analysis.	PO1	PSO2	PEO1	Apply (Apply) - Medium
Analyze dramatic structure and character development in Shakespeare's "The Merchant of Venice".	PO1	PSO2	PEO1, PEO4	Analyze (Analyze) - High
Demonstrate understanding of historical and cultural contexts.	PO1, PO4	PSO1	PEO1, PEO4	Understand (Understand) - Medium
B.A. Part- I English Literature II (Prose and Fiction)				
Critically evaluate philosophical and ethical arguments in specified texts.	PO1, PO3	PSO2	PEO1, PEO3	Evaluate (Evaluate) - High
Analyze narrative techniques and themes in short stories by specified authors.	PO1	PSO2	PEO1	Analyze (Analyze) - Medium
Understand and differentiate between narration types and literary forms.	PO1	PSO2	PEO1	Analyze (Analyze) - High
Analyze social and cultural context of Dickens' "Oliver Twist".	PO1, PO4	PSO3	PEO1, PEO4	Analyze (Analyze) - High
Demonstrate effective communication skills through written and oral expression.	PO2	PSO4	PEO2	Communicate (Communicate) - Medium
B.A. Part- II English Literature I (Poetry and Drama)				
Analyze Romantic themes and poetic techniques of specified authors.	PO1, PO5	PSO1	PEO1, PEO4	Analyze (Analyze) - Medium
Interpret and critically evaluate poems by specified authors.	PO1, PO2	PSO2	PEO1, PEO4	Interpret/Evaluate (Evaluate) - High
Analyze development of post-colonial Indian poetry through specified texts.	PO1, PO5	PSO1	PEO1, PEO4	Analyze (Analyze) - Medium
Analyze dramatic themes and techniques in specified plays.	PO1, PO3	PSO2	PEO1, PEO3	Analyze (Analyze) - High
Demonstrate understanding of the relationship between literature and society.	PO1, PO4	PSO3	PEO1, PEO4	Understand (Understand) - Medium
B.A. Part- II English Literature II (Prose and Fiction)				
Analyze philosophical and spiritual insights in specified texts.	PO1, PO3	PSO2	PEO1, PEO3	Evaluate (Evaluate) - High
Understand and apply critical reading strategies from specified texts.	PO1	PSO2	PEO1	Analyze (Analyze) - Medium
Analyze themes and narrative techniques in short stories by specified authors.	PO1	PSO2	PEO1	Analyze (Analyze) - Medium
Analyze symbolism and psychological themes in "Lord of the Flies".	PO1, PO3	PSO2	PEO1, PEO3	Analyze (Analyze) - High
Demonstrate ability to conduct independent research on literary topics.	PO3	PSO4	PEO1, PEO3	Research (Create) - High
B.A. Part- III English Literature I (Poetry and Drama)				
Analyze Victorian and Modern themes and poetic techniques of specified authors.	PO1, PO5	PSO1	PEO1, PEO4	Analyze (Analyze) - Medium
Interpret and critically evaluate poems by specified authors (including Indian and global poets).	PO1, PO2	PSO2	PEO1, PEO4	Interpret/Evaluate (Evaluate) - High
Analyze themes and dramatic techniques in specified plays.	PO1	PSO2	PEO1	Analyze (Analyze) - High
Demonstrate understanding of the global context of literature.	PO1, PO4	PSO5	PEO1, PEO4	Understand (Understand) - Medium
Communicate literary insights effectively through creative writing.	PO2, PO5	PSO2, PSO5	PEO2, PEO4	Create (Create) - Medium
B.A. Part- III English Literature II (Prose and Fiction)				
Analyze social and political themes in specified novels.	PO1, PO4	PSO3	PEO1, PEO4	Analyze (Analyze) - High
Analyze feminist themes and narrative techniques in short stories by specified authors.	PO1, PO3	PSO2, PSO4	PEO1, PEO3	Analyze (Analyze) - Medium
Analyze cultural and psychological themes in specified novels.	PO1, PO4	PSO2	PEO1, PEO4	Analyze (Analyze) - High
Demonstrate mastery of various writing skills.	PO1, PO3	PSO2	PEO1, PEO3	Analyze (Analyze) - High
Demonstrate awareness of contemporary literary trends and issues.	PO2, PO3	PSO4	PEO2, PEO3	Apply (Apply) - High

M.A. English Literature Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
M.A.Previous English Literature	Grammar, Usage, and Phonetics	Demonstrate mastery of English grammar mechanics and structures.	Apply grammatical awareness to enhance writing and speaking clarity.	Employ appropriate vocabulary and register nuances in various contexts.	Pronounce English words with consistent accuracy and articulation.	Transcribe words effectively and identify word stress patterns.
M.A.Previous English Literature	Literary Theory	Analyze literary texts through multiple theoretical lenses with confidence.	Compare and contrast major literary theories and their applications.	Apply theoretical frameworks to interpret texts thoughtfully and insightfully.	Develop a critical perspective on literature and its role in society.	Communicate literary analysis effectively both in writing and discussion.
M.A.Previous English Literature	Renaissance to Augustans	Demonstrate thorough understanding of key literary works from the Renaissance to the Augustan period.	Analyze these works within their historical and cultural contexts.	Identify and discuss significant themes and ideas present in the texts.	Compare and contrast various literary genres from this era.	Cultivate a deep appreciation for the richness and complexity of early modern literature.
M.A.Previous English Literature	Pre-Romantics to Romantics	Possess in-depth knowledge of major literary works from the Pre-Romantic and Romantic periods.	Analyze these works within their historical and cultural contexts.	Identify and discuss major themes and ideas present in the texts.	Compare and contrast various literary genres from this era.	Develop an appreciation for the emotional impact and imaginative reach of Romantic literature.
M.A. FinalEnglish Literature	Literary Theory	Analyze literary texts through diverse theoretical lenses, including Western and non-Western perspectives.	Evaluate and compare the strengths and limitations of different theoretical approaches.	Apply theoretical frameworks to interpret texts critically and engage in productive dialogue.	Develop a nuanced understanding of the relationship between literature, culture, and identity.	Communicate complex literary analysis effectively in writing and oral presentations.
M.A. FinalEnglish Literature	Twentieth Century Literature: Poetry and Drama	Demonstrate familiarity with significant poetry and drama from the 20th century.	Analyze these works within their historical, social, and political contexts.	Identify and discuss major themes and innovations in 20th-century poetry and drama.	Compare and contrast different poetic and dramatic forms and movements.	Appreciate the diverse voices and perspectives represented in 20th-century literature.
M.A. FinalEnglish Literature	Twentieth Century Literature: Prose and Fiction	Possess a strong understanding of key prose fiction and non-fiction from the 20th century.	Analyze these works within their historical, social, and intellectual contexts.	Identify and discuss major themes and trends in 20th-century prose literature.	Compare and contrast different narrative styles and techniques.	Appreciate the evolving role of prose literature in shaping individual and collective identities.
M.A. FinalEnglish Literature	Indian Writing in English and in Translation	Demonstrate knowledge of significant texts from Indian writing in English and in translation.	Analyze these works within their historical, cultural, and political contexts, both Indian and global.	Identify and discuss major themes and concerns in Indian writing, such as identity, colonialism, and postcolonialism.	Compare and contrast different stylistic and thematic trends in Indian literature.	Appreciate the diverse voices and perspectives within Indian writing and their contributions to world literature.
M.A. FinalEnglish Literature	American Literature	Possess a thorough understanding of major works from the American literary canon.	Analyze these works within their historical, social, and cultural contexts.	Identify and discuss major themes and movements in American literature, such as Transcendentalism, Realism, and Modernism.	Compare and contrast different literary genres and styles within American literature.	Appreciate the unique character and ongoing evolution of American literature.

M.A. English Literature Program Summary Sheet

S.NO.	Program Outcomes (POs):	Program Specific Outcomes (PSOs):	Program Educational Objectives (PEOs):
PO1/PSO1/PEO1	**Comprehensive Literary Knowledge:** Graduates will demonstrate a thorough understanding of major literary periods, genres, movements, and key authors across diverse cultural and historical contexts.	**Literary Analysis and Interpretation:** Graduates will be able to conduct insightful analyses of literary texts, identifying themes, symbols, stylistic features, and their significance within historical, cultural, and social contexts.	**Career Preparedness:** Prepare graduates for successful careers in diverse fields related to English literature, including teaching, editing, writing, research, publishing, cultural management, and public communication.
PO2/PSO2/PEO2	**Critical and Theoretical Engagement:** Graduates will apply various literary theories and critical approaches to analyze, interpret, and evaluate literary texts, recognizing the strengths and limitations of different perspectives.	**Research and Scholarship:** Graduates will be equipped to conduct original research on literary topics, utilizing appropriate research methodologies, critically evaluating sources, and presenting their findings in a persuasive and scholarly manner.	**Academic Advancement:** Equip graduates with the necessary skills and knowledge for pursuing further academic studies, such as Ph.D. programs in English literature or related fields.
PO3/PSO3/PEO3	**Effective Communication and Scholarship:** Graduates will communicate their understanding of literature effectively in both written and oral forms, crafting well-structured arguments, conducting research, and presenting their findings in a clear and scholarly manner.	**Theoretical Fluency:** Graduates will demonstrate fluency in applying diverse literary theories, including Western and non-Western approaches, to interpret texts and engage in critical dialogue about their meaning and significance.	**Lifelong Learning and Engagement:** Nurture a lifelong love of reading, critical thinking, and engagement with literature, fostering intellectual curiosity and independent thought.
PO4/PSO4/PEO4	**Intercultural Understanding and Global Awareness:** Graduates will develop a deep appreciation for the diversity of human experience and expression through literature, fostering intercultural understanding and engaging with global perspectives.	**Historical and Cultural Awareness:** Graduates will develop a comprehensive understanding of the historical and cultural contexts that shape literary production and interpretation, recognizing the interplay of literature and society.	**Holistic Development:** Develop well-rounded individuals with strong communication, research, analytical, and critical thinking skills, prepared to contribute meaningfully to society and global communities.
PO1/PSO1/PEO5	**Lifelong Learning and Intellectual Curiosity:** Graduates will cultivate a passion for lifelong learning and critical engagement with literature, exploring new ideas, challenging assumptions, and adapting to evolving literary landscapes.	**Global and Postcolonial Perspectives:** Graduates will critically examine the role of literature in shaping cultural identities, addressing issues of power and representation, and engaging with global and postcolonial perspectives.	**Intercultural Understanding:** Promote intercultural understanding, global awareness, and ethical responsibility through the study of diverse literary voices and perspectives, encouraging empathy and responsible engagement with the world.

Mapping of Course Outcomes of all courses of M.A.English Literature with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives				
Course Outcomes	**Program Outcomes**	**Program Specific Outcomes**	**Program Educational Objectives**	**Level**
M.A.Previous English Literature Grammar, Usage, and Phonetics				
Demonstrate mastery of English grammar mechanics and structures.	PO1, PO3	None	PEO1, PEO4	Apply (Medium)
Apply grammatical awareness to enhance writing and speaking clarity.	PO3	PSO1	PEO1, PEO3	Analyze (Medium)
Employ appropriate vocabulary and register nuances in various contexts.	PO3	PSO1	PEO1, PEO3	Apply (Medium)
Pronounce English words with consistent accuracy and articulation.	PO3	None	PEO1, PEO4	Apply (Medium)
Transcribe words effectively and identify word stress patterns.	PO3	None	PEO1, PEO3	Understand (Medium)
M.A.Previous English Literature Literary Theory				
Analyze literary texts through multiple theoretical lenses with confidence.	PO2, PO3	PSO3	PEO1, PEO2, PEO3	Analyze (High)
Compare and contrast major literary theories and their applications.	PO2, PO3	PSO3	PEO1, PEO2, PEO3	Analyze (High)
Apply theoretical frameworks to interpret texts thoughtfully and insightfully.	PO2, PO3	PSO1, PSO3	PEO1, PEO2, PEO3	Apply (High)
Develop a critical perspective on literature and its role in society.	PO2, PO4	PSO3	PEO1, PEO2, PEO3, PEO5	Evaluate (Medium)
Communicate literary analysis effectively both in writing and discussion.	PO3	PSO1	PEO1, PEO3	Communicate (Medium)
M.A.Previous English Literature Renaissance to Augustans				
Demonstrate thorough understanding of key literary works from the Renaissance to the Augustan period.	PO1	PSO1, PSO4	PEO1, PEO2	Analyze (High)
Analyze these works within their historical and cultural contexts.	PO1, PO4	PSO4	PEO1, PEO2, PEO5	Analyze (High)
Identify and discuss significant themes and ideas present in the texts.	PO1, PO2	PSO1	PEO1, PEO2	Analyze (High)
Compare and contrast various literary genres from this era.	PO1	PSO1	PEO1, PEO2	Compare (Medium)
Cultivate a deep appreciation for the richness and complexity of early modern literature.	PO1, PO4	None	PEO1, PEO3, PEO5	Understand (Medium)
M.A.Previous English Literature Pre-Romantics to Romantics				
Possess in-depth knowledge of major literary works from the Pre-Romantic and Romantic periods.	PO1	PSO1, PSO4	PEO1, PEO2	Analyze (High)

Analyze these works within their historical and cultural contexts.	PO1, PO4	PSO4	PEO1, PEO2, PEO5	Analyze (High)
Identify and discuss major themes and ideas present in the texts.	PO1, PO2	PSO1	PEO1, PEO2	Analyze (High)
Compare and contrast various literary genres from this era.	PO1	PSO1	PEO1, PEO2	Compare (Medium)
Develop an appreciation for the emotional impact and imaginative reach of Romantic literature.	PO1	PSO1	PEO1, PEO2	Compare (Medium)
M.A. Final English Literature Literary Theory				
Analyze literary texts through diverse theoretical lenses, including Western and non-Western perspectives.	PO2, PO3, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Evaluate (High)
Evaluate and compare the strengths and limitations of different theoretical approaches.	PO2, PO3, PO5	PSO3	PEO1, PEO2, PEO3, PEO5	Compare (High)
Apply theoretical frameworks to interpret texts critically and engage in productive dialogue.	PO2, PO3, PO5	PSO1, PSO3	PEO1, PEO2, PEO3, PEO5	Apply (High)
Develop a nuanced understanding of the relationship between literature, culture, and identity.	PO2, PO4	PSO4	PEO1, PEO2, PEO3, PEO5	Understand (High)
Communicate complex literary analysis effectively in writing and oral presentations.	PO3	PSO1	PEO1, PEO2, PEO3	Communicate (High)
M.A. Final English LiteratureTwentieth Century Literature: Poetry and Drama				
Demonstrate familiarity with significant poetry and drama from the 20th century.	PO1	PSO1, PSO4	PEO1, PEO2	Analyze (High)
Analyze these works within their historical, social, and political contexts.	PO1, PO4	PSO4	PEO1, PEO2, PEO5	Analyze (High)
Identify and discuss major themes and innovations in 20th-century poetry and drama.	PO1, PO2	PSO1	PEO1, PEO2	Analyze (High)
Compare and contrast different poetic and dramatic forms and movements.	PO1	PSO1	PEO1, PEO2	Compare (Medium)
Appreciate the diverse voices and perspectives represented in 20th-century literature.	PO4	None	PEO1, PEO3, PEO5	Understand (Medium)
M.A. Final English Literature Twentieth Century Literature: Prose and Fiction				
Possess a strong understanding of key prose fiction and non-fiction from the 20th century.	PO1	PSO1, PSO4	PEO1, PEO2	Analyze (High)
Analyze these works within their historical, social, and intellectual contexts.	PO1, PO4	PSO4	PEO1, PEO2, PEO5	Analyze (High)

Identify and discuss major themes and trends in 20th-century prose literature.	PO1, PO2	PSO1	PEO1, PEO2	Analyze (High)
Compare and contrast different narrative styles and techniques.	PO1	PSO1	PEO1, PEO2	Compare (Medium)
Appreciate the evolving role of prose literature in shaping individual and collective identities.	PO4	None	PEO1, PEO3, PEO5	Understand (Medium)
M.A. Final English Literature Indian Writing in English and in Translation				
Demonstrate knowledge of significant texts from Indian writing in English and in translation.	PO1	PSO1, PSO4	PEO1, PEO2	Analyze (High)
Analyze these works within their historical, cultural, and political contexts, both Indian and global.	PO1, PO4	PSO4	PEO1, PEO2, PEO5	Analyze (High)
Identify and discuss major themes and concerns in Indian writing, such as identity, colonialism, and postcolonialism.	PO1, PO2	PSO1	PEO1, PEO2, PEO5	Analyze (High)
Compare and contrast different stylistic and thematic trends in Indian literature.	PO1	PSO1	PEO1, PEO2	Compare (Medium)
Appreciate the diverse voices and perspectives within Indian writing and their contributions to world literature.	PO4	None	PEO1, P	Understand (Medium)
M.A. Final English Literature American Literature				
Possess a thorough understanding of major works from the American literary canon.	PO1	PSO1, PSO4	PEO1, PEO2	Analyze (High)
Analyze these works within their historical, social, and cultural contexts.	PO1, PO4	PSO4	PEO1, PEO2, PEO5	Analyze (High)
Identify and discuss major themes and movements in American literature, such as Transcendentalism, Realism, and Modernism.	PO1, PO2	PSO1	PEO1, PEO2	Analyze (High)
Compare and contrast different literary genres and styles within American literature.	PO1	PSO1	PEO1, PEO2	Compare (Medium)
Appreciate the unique character and ongoing evolution of American literature.	PO4	None	PEO1, PEO3, PEO5	Understand (Medium)

B.A. Geography Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.A.Part-I	Physical Geography.(I)	Define and understand the scope and development of physical geography.	Explain the geological history of Earth and the zoning of its interior.	Classify rocks into igneous, sedimentary, and metamorphic, and explain their origin.	Discuss the origin of continents and oceans, and the theory of continental drift and plate tectonics.	Analyze the concept of isostasy and its different hypotheses.
B.A.Part-I	Geography of Rajasthan (II)	Describe the physical aspects of Rajasthan, including the Thar Desert, Aravalli Hill, plains, plateaus, and geological structure.	Explain the drought program, drainage system, lakes, mineral resources, and distribution and production of irrigation sources.	Analyze the quality of irrigation water, problems associated with it, irrigation projects, and agricultural development.	Discuss the development of livestock, minerals, problems and conservation of water resources, industries, transport & trade, and Aravalli hill development program.	Examine the culture and development aspects, population, occupational structure, scheduled tribes, population problems, and study of Bhil, Meena, Garasia, settlement patterns, building materials, and house types in Rajasthan.
B.A.Part-II	Resource Geography(I)	Define and understand the nature, scope, and significance of resources geography.	Explain the distribution, exploitation, and uses of iron ore, manganese, copper, and zinc, using the Classification of Zimmerman.	Analyze the conservation of resources, including forests, water, soils, fishers, and minerals.	Discuss human resources, including population, distribution, growth, density, causes of inequalities, population-resources relationship, and their problems.	Examine cereal crops (rice, wheat) and commercial crops (cotton, rubber, jute, sugarcane, tea, coffee), and understand the concepts of resources utilization and conservation, water conservation and rainwater harvesting, and resources regions of the world.
B.A.Part-II	Human Geography (II)	Define and understand human geography, its aims and scope, and its relationship with other sciences.	Explain the principles of human geography, essential factors according to Brunches and Huntington, and the school of man-environment relations (determinism, possibilism, neo-determinism).	Analyze human races, their evolution and migration, the zone-strata theory, classification of races (types, characteristics, distribution), and human races in India.	Discuss tribes of the world (Eskimos, Bushman, Pigmy, Masai, Badduien, Khirgiz) and tribes in India (Bhil, Nagas, Santhal, Gond, Toda, Gujjar in Jammu & Kashmir).	Examine population growth and theories, distribution and density of world population, migration of population (cause, types, and impact), population regions in India, rural settlement (factors affecting development, types, and patterns), building materials and house types, urban settlement process, and urban problems in India.
B.A.Part-III	Geography of Asia (I)	Analyze the physical and human geography of Asia and Europe, including terrain patterns, drainage systems, climate, vegetation, soils, population distribution, and economic activities.	Compare and contrast the regional characteristics of South West Asia, the British Isles, France, and Germany.	Evaluate the natural environment and economic base of North America, focusing on the New England region.	Understand the physical geography and economic development of South America, with a specific focus on Brazil.	Describe the unique geographical features and economic potential of Australia and New Zealand
B.A.Part-III	Geography of India (II)	Explain the geographical location and significance of India within the context of South and Southeast Asia.	Analyze the mechanisms and impacts of the Indian monsoon on the country's climate and agriculture.	Identify and classify the major vegetation zones and soil types across India.	Evaluate the role of major irrigation projects like Bhakra Nangal, Damodar Valley, and Indira Gandhi Nahar Pariyojana in	

B.A. Geography Program Summary Sheet:			
S.NO.	**Program Outcomes (POs)**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives(PEOs)**
PO1/PSO1/PEO1	PO1: ***Problem-solving and decision-making:*** Graduates will be able to analyze and address complex geographical problems, drawing upon knowledge of physical and human geography, and make informed decisions based on critical thinking and ethical considerations.	PSO1: ***Understanding Earth's systems:*** Graduates will demonstrate a comprehensive understanding of Earth's physical systems, including geological history, landforms, climate, natural resources, and environmental processes.	PEO1: Critically analyze and explain Earth's dynamic systems, including geological history, landforms, climate, oceans, and resources, considering both physical processes and human interactions.
PO2/PSO2/PEO2	PO2: ***Communication and collaboration:*** Graduates will effectively communicate geographical information and insights to diverse audiences through written, oral, visual, and spatial presentations, and collaborate effectively within multidisciplinary teams.	PSO2: ***Human-environment interactions:*** Graduates will analyze the complex interactions between human societies and the environment at local, regional, and global scales, assessing the impacts of human activities on natural systems and exploring sustainable solutions.	PEO2: Evaluate human use of natural and human resources, including mineral resources, agriculture, and population pressures, advocating for sustainable practices and conservation strategies.
PO3/PSO3/PEO3	PO3: ***Quantitative analysis and spatial thinking:*** Graduates will apply quantitative methods and spatial analysis techniques to interpret geographical data, create maps, visualize patterns, identify trends, and model relationships.	PSO3: ***Geographical research and fieldwork:*** Graduates will design and conduct geographical research, collect and analyze data using appropriate methods and tools, and effectively communicate findings through written reports, presentations, and visual representations.	PEO3: Understand and explain the complex relationships between human societies and the environment at local, regional, and global scales, applying spatial analysis and considering diverse perspectives.
PO4/PSO4/PEO4	PO4: ***Lifelong learning and adaptability:*** Graduates will demonstrate intellectual curiosity, adaptability to changing environments, and a commitment to continuous learning in the field of geography, utilizing diverse resources and technologies.	PSO4: ***Spatial analysis and mapping:*** Graduates will apply geographic information systems (GIS) and other spatial analysis techniques to interpret and present geographical data, create maps, conduct spatial analysis, and visualize patterns and relationships.	PEO4: Analyze and address pressing geographical challenges such as climate change, resource scarcity, and urbanization, proposing solutions informed by geographical knowledge and critical thinking.
PO5/PSO5/PEO5	PO5: ***Professional and ethical conduct:*** Graduates will uphold ethical principles and professional standards in geographical research, analysis, and practice, demonstrating responsibility towards social and environmental issues.	PSO5: ***Understanding global and regional issues:*** Graduates will critically analyze pressing global and regional issues such as climate change, resource scarcity, urbanization, population dynamics, economic development, and social inequalities from a geographical perspective.	PEO5: Effectively communicate geographical concepts, data, and insights to diverse audiences through written, oral, visual, and spatial forms, collaborating effectively within teams and across disciplines.
PO6/PSO6/PEO6			PEO6: Conduct geographical research and fieldwork, employing appropriate methods and tools for data collection and analysis, and effectively communicate findings through various mediums such as reports, presentations, and maps.
PO7/PSO7/PEO7			PEO7: Engage critically with the physical and human geography of diverse regions worldwide, demonstrating an understanding of their unique landscapes, cultures, and economic systems, and their place in the global context.

Mapping of Course Outcomes of all courses of B.A.Geography with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
B.A.Part-I Physical Geography.(I)				
Define and understand the scope and development of physical geography.	PO1,PO 4	PSO1, PSO5	PEO1, PEO3, PEO7	Understand (Low)
Explain the geological history of Earth and the zoning of its interior.	PO1, PO3	PSO1, PSO3	PEO1, PEO2, PEO7	Analyze (Medium)
Classify rocks into igneous, sedimentary, and metamorphic, and explain their origin.	PO1, PO3	PSO1, PSO3	PEO1, PEO2	Analyze (Medium)
Discuss the origin of continents and oceans, and the theory of continental drift and plate tectonics.	PO1, PO3	PSO1, PSO3, PSO5	PEO1, PEO2, PEO4, PEO7	Analyze (Medium)
Analyze the concept of isostasy and its different hypotheses.	PO1, PO3	PSO1, PSO3	PEO1, PEO2, PEO7	Evaluate (High)
B.A.Part-I Geography of Rajasthan (II)				
Describe the physical aspects of Rajasthan, including the Thar Desert, Aravalli Hill, plains, plateaus, and geological structure.	PO1, PO3	PSO1, PSO3, PSO5	PEO1, PEO2, PEO7	Understand (Low)
Explain the drought program, drainage system, lakes, mineral resources, and distribution and production of irrigation sources.	PO1, PO3, PO5	PSO1, PSO3, PSO5	PEO1, PEO2, PEO3, PEO7	Explain (Medium)
Analyze the quality of irrigation water, problems associated with it, irrigation projects, and agricultural development.	PO1, PO3, PO5	PSO1, PSO3, PSO5	PEO1, PEO2, PEO3, PEO7	Analyze (Medium)
Discuss the development of livestock, minerals, problems and conservation of water resources, industries, transport & trade, and Aravalli hill development program.	PO1, PO3, PO5	PSO1, PSO3, PSO5	PEO1, PEO2, PEO3, PEO7	Analyze (Medium)
Examine the culture and development aspects, population, occupational structure, scheduled tribes, population problems, and study of Bhil, Meena, Garasia, settlement patterns, building materials, and house types in Rajasthan.	PO1, PO3, PO5	PSO1, PSO3, PSO5	PEO1, PEO2, PEO3, PEO7	Evaluate (High)
B.A.Part-II Resource Geography(I)				
Define and understand the nature, scope, and significance of resources geography.	PO1, PO3	PSO1, PSO2, PSO5	PEO1, PEO2, PEO4	Understand (Low)

Explain the distribution, exploitation, and uses of iron ore, manganese, copper, and zinc, using the Classification of Zimmerman.	PO1, PO3	PSO1, PSO3, PSO5	PEO1, PEO2, PEO3, PEO7	Explain (Medium)
Analyze the conservation of resources, including forests, water, soils, fishers, and minerals.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO4, PEO7	Analyze (Medium)
Discuss human resources, including population, distribution, growth, density, causes of inequalities, population-resources relationship, and their problems.	PO1, PO3	PSO1, PSO3, PSO5	PEO1, PEO2, PEO3, PEO7	Analyze (Medium)
B.A.Part-II Human Geography (II)				
Examine cereal crops (rice, wheat) and commercial crops (cotton, rubber, jute, sugarcane, tea, coffee), and understand the concepts of resources utilization and conservation, water conservation and rainwater harvesting, and resources regions of the world.	PO1, PO3	PSO1, PSO3, PSO5	PEO1, PEO2, PEO4, PEO7	Evaluate (High)
Define and understand human geography, its aims and scope, and its relationship with other sciences.	PO1, PO3	PSO1, PSO2, PSO5	PEO1, PEO2, PEO3, PEO7	Understand (Low)
Explain the principles of human geography, essential factors according to Brunches and Huntington, and the school of man-environment relations (determinism, possibilism, neo-determinism).	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO4, PEO7	Explain (Medium)
Analyze human races, their evolution and migration, the zone-strata theory, classification of races (types, characteristics, distribution), and human races in India.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO4, PEO7	Analyze (Medium)
Discuss tribes of the world (Eskimos, Bushman, Pigmy, Masai, Badduien, Khirgiz) and tribes in India (Bhil, Nagas, Santhal, Gond, Toda, Gujjar in Jammu & Kashmir).	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO4, PEO7	Analyze (Medium)

Examine population growth and theories, distribution and density of world population, migration of population (cause, types, and impact), population regions in India, rural settlement (factors affecting development, types, and patterns), building materials and house types, urban settlement process, and urban problems in India.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO2, PEO4, PEO7	Analyze (Medium)
B.A.Part-III Geography of Asia (I)				
Analyze the physical and human geography of Asia and Europe, including terrain patterns, drainage systems, climate, vegetation, soils, population distribution, and economic activities.	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Analyze (Medium)
Compare and contrast the regional characteristics of South West Asia, the British Isles, France, and Germany.	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3PEO6, PEO7	Compare & Contrast
Evaluate the natural environment and economic base of North America, focusing on the New England region.	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Evaluate (High)
Understand the physical geography and economic development of South America, with a specific focus on Brazil.	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Understand (Low)
Describe the unique geographical features and economic potential of Australia and New Zealand	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Describe(Medium)
B.A.Part-III Geography of India (II)				
Explain the geographical location and significance of India within the context of South and Southeast Asia.	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Explain (Medium)
Analyze the mechanisms and impacts of the Indian monsoon on the country's climate and agriculture.	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Analyze (Medium)
Identify and classify the major vegetation zones and soil types across India.	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Identify & Classify(Low)
Evaluate the role of major irrigation projects like Bhakra Nangal, Damodar Valley, and Indira Gandhi Nahar Pariyojana in	PO1, PO3	PSO1, PSO2, PSO3,PSO5	PEO1, PEO2, PEO3, PEO7	Evaluate (High)

M.A. Geography Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
M.A.(Previous) Geography	History & Philosophy	CO1: Analyze the evolution of geographical thought across various historical periods, including ancient Indian, classical, medieval, Renaissance, and modern approaches.	CO2: Explain the development and application of key geographical concepts like spatial relationships, landscape, scale, and distribution in understanding geographical phenomena.	CO3: Compare and contrast diverse perspectives in geography, including humanism, structuralism, postmodernism, and critical geography, assessing their contributions to contemporary studies.	CO4: Evaluate the historical and contemporary role of geography in understanding cultural, political, and economic issues, highlighting its societal significance.	CO5: Integrate knowledge of historical and philosophical foundations with current trends in geographical research and practice, fostering a well-rounded understanding of the discipline.
M.A.(Previous) Geography	Physical Geography	CO1: Explain the geological history and structure of the Earth, analyzing the formation of Earth's interior, rocks, continents, and oceans, applying theories like plate tectonics and isostasy.	CO2: Describe the Earth's atmosphere and climate, explaining processes of insolation, heat budget, air temperature, pressure, wind systems, precipitation, and monsoons.	CO3: Analyze the composition and structure of oceans, discussing physical characteristics of ocean floors, temperature, salinity, tides, waves, and currents, and their impact on climate and ecosystems.	CO4: Evaluate the interaction between physical and biological systems, analyzing the biosphere, ecosystems, and ecological processes in relation to geological and climatic factors.	CO5: Apply spatial analysis tools like Geographic Information Systems (GIS) to visualize and analyze physical geographical data, enhancing understanding of spatial patterns and relationships.
M.A.(Previous) Geography	Economic Geography	CO1: Explain the spatial organization of economic activity, analyzing the relationship between economic systems, resource distribution, and spatial patterns of production, consumption, and trade.	CO2: Evaluate different development models and theories, critically assessing concepts like primary, secondary, and tertiary sectors, regional disparities, and economic development models applicable to diverse contexts.	CO3: Analyze the role of agriculture in global economies, comparing and contrasting different agricultural systems (subsistence, plantation, commercial) and their impact on land use and environmental sustainability.	CO4: Explain the factors affecting the location of major industries, applying location theories (Weber, Hoover, etc.) to analyze the distribution of manufacturing industries and their importance in regional development.	CO5: Assess the impact of globalization on the economic landscape, analyzing trends in global trade, trade barriers, the role of economic blocks, and their consequences for different regions.
M.A.(Previous) Geography	Environmental Geography	CO1: Explain the complex relationship between humans and the environment, analyzing different perspectives on environmental determinism, possibilism, and neo-determinism in understanding human-environment interaction.	CO2: Evaluate the major environmental challenges and their causes, analyzing environmental issues like ozone depletion, greenhouse gas effects, global warming, water scarcity, desertification, and pollution, identifying anthropogenic and natural drivers.	CO3: Discuss the concept of sustainable development and its practical application in environmental management, resource conservation, wildlife conservation, and biodiversity preservation.	CO4: Critically analyze local and global environmental issues, examining case studies of environmental degradation and conservation efforts in specific regions, including India.	CO5: Advocate for environmental awareness and education, developing strategies for promoting environmental awareness and encouraging responsible interaction with the environment.
M.A. (Final) Geography	Advanced Geography of India	CO1: Analyze the physical and cli	CO2: Evaluate the development and impact o	CO3: Assess the economic and environm	CO4: Analyze the distribution and impact of major industries in India (e.g., cotton, cement) and the factors influencing their location.	CO5: Explain the challenges and opportunities associated with urbanization in India, considering population trends, regional disparities, and environmental issues.
M.A. (Final) Geography	Industrial Geography	CO1: Analyze the key factors influencing the location of industries, applying location theories (cost, market area, etc.) to real-world examples.	CO2: Explain the concept of optimum location and its role in industrial decision-making, considering cost, price, and multi-locational trends.	CO3: Distinguish between market-oriented and raw material-oriented industries, analyzing their spatial distribution and economic significance.	CO4: Assess the economic importance of major industrial regions across the world, selecting one from each of USA, Russia, Japan, Britain, or Western Europe.	CO5: Analyze the changing character of industrial regions in India, focusing on the evolution of regions like Hooghly or Damodar Valley, and the impact of technological advancements.
M.A. (Final) Geography	Urban Geography	CO1: Explain the meaning, aims, importance, and scope of urban geography, outlining its theoretical foundations and contemporary relevance.	CO2: Analyze the factors influencing the growth and development of towns and cities across different historical periods, from Neolithic to Industrial Revolution and beyond.	CO3: Identify and describe the chief characteristics of towns and cities, including physical form, spatial patterns, and functional relationships.	CO4: Analyze trends and patterns of urbanization in the world and in India since 1901, identifying factors driving urban growth and its associated challenges.	CO5: Apply the principles of town planning and master plan development, analyzing a case study like Jaipur city to understand planning processes and implementation challenges.
M.A. (Final) Geography	Water Resource Geography	CO1: Define and explain the scope and importance of water resource geography, highlighting the global distribution and inventory of water resources.	CO2: Analyze the demand and use of water resources in India, exploring different irrigation methods and the challenge of water conservation.	CO3: Evaluate the major environmental threats to water resources in India, including water pollution, salinity, and overexploitation of groundwater.	CO4: Discuss the concept of sustainable water management and analyze practical strategies like traditional methods, integrated basin planning, and watershed management.	CO5: Analyze the relationship between water resources and development in India, examining case studies of water conflicts and the role of technology in water management.

M.A. Geography Program Summary Sheet:			
S.NO.	**Program Learning Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs)**
PO1/PSO1/PEO1	PO1: Critical Thinking and Problem-Solving: Analyze complex geographical problems, drawing upon knowledge of physical and human geography, and make informed decisions based on critical thinking and ethical considerations.	PSO1: Understanding Earth's Systems: Demonstrate a comprehensive understanding of Earth's physical systems, including geological history, landforms, climate, natural resources, and environmental processes.	PEO1: Geographical Data Analysis and Visualization: Effectively process, analyze, and visualize geographical data using diverse tools and techniques, including GIS and statistical software.
PO2/PSO2/PEO2	PO2: Communication and Collaboration: Effectively communicate geographical information and insights to diverse audiences through written, oral, visual, and spatial presentations, and collaborate effectively within multidisciplinary teams.	PSO2: Human-Environment Interactions: Analyze the complex interactions between human societies and the environment at local, regional, and global scales, assessing the impacts of human activities on natural systems and exploring sustainable solutions.	PEO2: Policy and Planning Expertise: Apply geographical knowledge and analytical skills to inform policy decisions and planning processes at local, regional, and national levels.
PO3/PSO3/PEO3	PO3: Quantitative Analysis and Spatial Thinking: Apply quantitative methods and spatial analysis techniques to interpret geographical data, create maps, visualize patterns, identify trends, and model relationships.	PSO3: Geographical Research and Fieldwork: Design and conduct geographical research, collect and analyze data using appropriate methods and tools, and effectively communicate findings through written reports, presentations, and visual representations.	PEO3: Environmental Sustainability: Advocate for and implement sustainable practices in land use, resource management, and environmental protection, contributing to ecological well-being.
PO4/PSO4/PEO4	PO4: Lifelong Learning and Adaptability: Demonstrate intellectual curiosity, adaptability to changing environments, and a commitment to continuous learning in the field of geography, utilizing diverse resources and technologies.	PSO4: Spatial Analysis and Mapping: Apply geographic information systems (GIS) and other spatial analysis techniques to interpret and present geographical data, create maps, conduct spatial analysis, and visualize patterns and relationships.	PEO4: Urban and Regional Development: Understand and address the challenges and opportunities associated with urban and regional development, promoting equity and livability.
PO5/PSO5/PEO5	PO5: Professional and Ethical Conduct: Uphold ethical principles and professional standards in geographical research, analysis, and practice, demonstrating responsibility towards social and environmental issues.	PSO5: Understanding Global and Regional Issues: Critically analyze pressing global and regional issues such as climate change, resource scarcity, urbanization, population dynamics, economic development, and social inequalities from a geographical perspective.	PEO5: Geographical Information Systems (GIS) Proficiency: Demonstrate strong skills in utilizing GIS for data management, mapping, spatial analysis, and communication of geographical information.
PO6/PSO6/PEO6	PO6: Global and Intercultural Understanding: Analyze and evaluate global and regional issues from a geographical perspective, understanding the complexities of cultural diversity and interconnectedness.	PSO6: India in Context: Analyze the physical, cultural, economic, and environmental factors shaping India within the context of South Asia, recognizing its unique geographic context and challenges.	PEO6: Communication and Collaboration: Effectively communicate complex geographical information to diverse audiences through written, oral, and visual presentations, and collaborate effectively in multidisciplinary teams.

PO7/PSO7/PEO7			PEO7: Lifelong Learning and Professional Development: Maintain a commitment to continuous learning and professional development, adapting to evolving technologies and practices in the field of geography.

Mapping of Course Outcomes of all courses of M.A.Geography with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes (COs)	Program Learning Outcomes (POs)	Program Specific Outcomes (PSOs)	Program Educational Objectives (PEOs)	Level
M.A.(Previous) Geography History & Philosophy				
CO1: Analyze the evolution of geographical thought across various historical periods, including ancient Indian, classical, medieval, Renaissance, and modern approaches.	PO1, PO6	PSO1, PSO3, PSO5, PSO6	PEO4, PEO6, PEO7	Analyze (Moderate)
CO2: Explain the development and application of key geographical concepts like spatial relationships, landscape, scale, and distribution in understanding geographical phenomena.	PO1, PO2, PO3	PSO1, PSO3, PSO4	PEO1, PEO4, PEO5	Explain (Low)
CO3: Compare and contrast diverse perspectives in geography, including humanism, structuralism, postmodernism, and critical geography, assessing their contributions to contemporary studies.	PO1, PO2, PO6	PSO1, PSO3, PSO5	PEO4, PEO6	Compare & Contrast (Moderate)
CO4: Evaluate the historical and contemporary role of geography in understanding cultural, political, and economic issues, highlighting its societal significance.	PO1, PO2, PO6	PSO1, PSO3, PSO5	PEO4, PEO6	Evaluate (High)
CO5: Integrate knowledge of historical and philosophical foundations with current trends in geographical research and practice, fostering a well-rounded understanding of the discipline.	PO1, PO3, PO4	PSO1, PSO3, PSO5	PEO4, PEO6, PEO7	Integrate (High)
M.A.(Previous) Geography Physical Geography				
CO1: Explain the geological history and structure of the Earth, analyzing the formation of Earth's interior, rocks, continents, and oceans, applying theories like plate tectonics and isostasy.	PO1, PO3	PSO1, PSO3	PEO1, PEO4	Explain (Moderate)
CO2: Describe the Earth's atmosphere and climate, explaining processes of insolation, heat budget, air temperature, pressure, wind systems, precipitation, and monsoons.	PO1, PO3	PSO1, PSO3	PEO1, PEO4	Describe (Low)
CO3: Analyze the composition and structure of oceans, discussing physical characteristics of ocean floors, temperature, salinity, tides, waves, and currents, and their impact on climate and ecosystems.	PO1, PO3	PSO1, PSO3	PEO1, PEO4	Analyze (Moderate)
CO4: Evaluate the interaction between physical and biological systems, analyzing the biosphere, ecosystems, and ecological processes in relation to geological and climatic factors.	PO1, PO3	PSO1, PSO2, PSO3	PEO1, PEO4	Evaluate (High)

CO5: Apply spatial analysis tools like Geographic Information Systems (GIS) to visualize and analyze physical geographical data, enhancing understanding of spatial patterns and relationships.	PO2, PO3, PO4	PSO3, PSO4	PEO1, PEO5	Apply (Moderate)
M.A.(Previous) Geography Economic Geography				
CO1: Explain the spatial organization of economic activity, analyzing the relationship between economic systems, resource distribution, and spatial patterns of production, consumption, and trade.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Explain (Moderate)
CO2: Evaluate different development models and theories, critically assessing concepts like primary, secondary, and tertiary sectors, regional disparities, and economic development models applicable to diverse contexts.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Evaluate (High)
CO3: Analyze the role of agriculture in global economies, comparing and contrasting different agricultural systems (subsistence, plantation, commercial) and their impact on land use and environmental sustainability.	PO1, PO3	PSO2, PSO3	PEO1, PEO4	Analyze (Moderate)
CO4: Explain the factors affecting the location of major industries, applying location theories (Weber, Hoover, etc.) to analyze the distribution of manufacturing industries and their importance in regional development.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Explain (Moderate)
CO5: Assess the impact of globalization on the economic landscape, analyzing trends in global trade, trade barriers, the role of economic blocks, and their consequences for different regions.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Assess (High)
M.A.(Previous) Geography Environmental Geography				
CO1: Explain the complex relationship between humans and the environment, analyzing different perspectives on environmental determinism, possibilism, and neo-determinism in understanding human-environment interaction.	PO1, PO3	PSO2, PSO3	PEO1, PEO4	Explain (Moderate)
CO2: Evaluate the major environmental challenges and their causes, analyzing environmental issues like ozone depletion, greenhouse gas effects, global warming, water scarcity, desertification, and pollution, identifying anthropogenic and natural drivers.	PO1, PO3	PSO2, PSO3	PEO1, PEO4	Evaluate (High)
CO3: Discuss the concept of sustainable development and its practical application in environmental management, resource conservation, wildlife conservation, and biodiversity preservation.	PO1, PO3	PSO2, PSO3	PEO1, PEO3, PEO4	Discuss (Moderate)

CO4: Critically analyze local and global environmental issues, examining case studies of environmental degradation and conservation efforts in specific regions, including India.	PO1, PO3	PSO2, PSO3, PSO		Critically Analyze (High)
CO5: Advocate for environmental awareness and education, developing strategies for promoting environmental awareness and encouraging responsible interaction with the environment.	PO1, PO2, PO5	PSO2, PSO3, PSO5	PEO3, PEO6	Advocate (High)
M.A. (Final) Geography Advanced Geography of India				
CO1: Analyze the physical and climatic factors shaping India within the context of South Asia, including monsoons, vegetation, soils, and major irrigation projects.	PO1, PO3	PSO1, PSO3, PSO6	PEO1, PEO4	Analyze (Moderate)
CO2: Evaluate the development and impact of key infrastructure projects in India, examining case studies of irrigation projects like Bhakra Nangal or Damodar Valley.	PO1, PO3	PSO2, PSO3, PSO6	PEO1, PEO4	Evaluate (High)
CO3: Assess the economic and environmental significance of major resources found in India, including forest types, mineral resources, and agricultural patterns.	PO1, PO3	PSO2, PSO3, PSO6	PEO1, PEO4	Assess (High)
CO4: Analyze the distribution and impact of major industries in India (e.g., cotton, cement) and the factors influencing their location.	PO1, PO3	PSO2, PSO3, PSO6	PEO1, PEO4	Analyze (Moderate)
CO5: Explain the challenges and opportunities associated with urbanization in India, considering population trends, regional disparities, and environmental issues	PO1, PO3	PSO2, PSO3, PSO6	PEO1, PEO4	Explain (Moderate)
M.A. (Final) Geography Industrial Geography				
CO1: Analyze the key factors influencing the location of industries, applying location theories (cost, market area, etc.) to real-world examples.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Analyze (Moderate)
CO2: Explain the concept of optimum location and its role in industrial decision-making, considering cost, price, and multi-locational trends.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Explain (Moderate)
CO3: Distinguish between market-oriented and raw material-oriented industries, analyzing their spatial distribution and economic significance.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Distinguish (Moderate)
CO4: Assess the economic importance of major industrial regions across the world, selecting one from each of USA, Russia, Japan, Britain, or Western Europe.	PO1, PO3	PSO2, PSO5	PEO1, PEO4	Assess (High)
CO5: Analyze the changing character of industrial regions in India, focusing on the evolution of regions like Hooghly or Damodar Valley, and the impact of technological advancements.	PO1, PO3	PSO2, PSO5, PSO6	PEO1, PEO4	Analyze (Moderate)
M.A. (Final) Geography Urban Geography				

CO1: Explain the meaning, aims, importance, and scope of urban geography, outlining its theoretical foundations and contemporary relevance.	PO1, PO2	PSO3, PSO4	PEO1, PEO4	Explain (Low)
CO2: Analyze the factors influencing the growth and development of towns and cities across different historical periods, from Neolithic to Industrial Revolution and beyond.	PO1, PO3	PSO3, PSO4	PEO1, PEO4	Analyze (Moderate)
CO3: Identify and describe the chief characteristics of towns and cities, including physical form, spatial patterns, and functional relationships.	PO1, PO3	PSO3, PSO4	PEO1, PEO4	Identify & Describe (Low)
CO4: Analyze trends and patterns of urbanization in the world and in India since 1901, identifying factors driving urban growth and its associated challenges.	PO1, PO3	PSO3, PSO4	PEO1, PEO4	Analyze (Moderate)
CO5: Apply the principles of town planning and master plan development, analyzing a case study like Jaipur city to understand planning processes and implementation challenges.	PO1, PO3	PSO3, PSO4	PEO1, PEO4	Apply (Moderate)
M.A. (Final) Geography Water Resource Geography				
CO1: Define and explain the scope and importance of water resource geography, highlighting the global distribution and inventory of water resources.	PO1, PO3	PO1, PO3	PSO2, PSO3	Define & Explain (Low)
CO2: Analyze the demand and use of water resources in India, exploring different irrigation methods and the challenge of water conservation.	PO1, PO3	PSO2, PSO3, PSO6	PEO1, PEO4	Analyze (Moderate)
CO3: Evaluate the major environmental threats to water resources in India, including water pollution, salinity, and overexploitation of groundwater.	PO1, PO3	PSO2, PSO3, PSO6	PEO1, PEO4	Evaluate (High)
CO4: Discuss the concept of sustainable water management and analyze practical strategies like traditional methods, integrated basin planning, and watershed management.	PO1, PO3	PSO2, PSO3, PSO5	PEO1, PEO3, PEO4	Discuss (Moderate)
CO5: Analyze the relationship between water resources and development in India, examining case studies of water conflicts and the role of technology in water management.	PO1, PO3	PSO2, PSO3, PSO6	PEO1, PEO4	Analyze (Moderate)

B.A. Political Science Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.A. Part-I	Foundation of political science	CO1: Explain the evolution and contemporary perspectives of political science.	CO2: Analyze the relationship of political science with other social sciences and key concepts like power, authority, and legitimacy.	CO3: Critically evaluate different political systems, including democracy and dictatorship, and their development and modernization process.	CO4: Compare and contrast major political ideologies like liberalism, Marxism, and feminism, understanding their historical context and impact.	CO5: Apply theoretical frameworks to analyze current political trends and issues, including rule of law, constitutionalism, and the role of organs of government.
B.A. Part-I	Representative Indian Political Thinkers	CO1: Analyze the key ideas and contributions of prominent Indian political thinkers like Manu, Kautilya, and Shukra, in the context of their historical periods.	CO2: Evaluate the impact of social reformers and leaders like Raja Rammohan Roy and Swami Dayananda Saraswati on the evolution of Indian political thought.	CO3: Critically examine the perspectives of national movement leaders like Gandhi, Nehru, and Ambedkar on issues like independence, democracy, and social justice.	CO4: Compare and contrast the diverse ideologies and approaches of different Indian political thinkers, understanding their influence on contemporary India.	CO5: Apply the insights of Indian political thinkers to analyze current social and political challenges in India.
B.A. Part-II	Selected Political System	CO1: Compare and contrast the key features of political systems in Britain, U.S.A., China, Japan, and Switzerland, focusing on their legislatures, executives, judiciaries, and party systems.	CO2: Analyze the historical development and current functioning of each political system, identifying their strengths, weaknesses, and unique characteristics.	CO3: Apply comparative frameworks to understand the impact of political institutions and processes on governance, citizen participation, and policy outcomes.	CO4: Evaluate the challenges and opportunities faced by each political system in the context of globalization and contemporary political trends.	CO5: Draw informed conclusions about the effectiveness and legitimacy of different political models based on comparative analysis.
B.A. Part-II	Indian Political System	CO1: Explain the historical context and key events that led to the rise of nationalism and the formation of the Indian National Congress and Muslim League.	CO2: Analyze the evolution of the Indian Constitution, including the Government of India Acts, the Constituent Assembly, and key features like federalism, fundamental rights, and directive principles.	CO3: Evaluate the structure and functions of key institutions in the Indian political system, including the Union Executive, Parliament, Supreme Court, and Election Commission.	CO4: Analyze the challenges faced by the Indian political system, including regionalism, casteism, communalism, and Naxalism, and assess potential solutions.	CO5: Explain the significance of Panchayati Raj and municipal governance in India and evaluate their role in promoting democracy and development.
B.A. Part-III	Representative Western Political Thinkers	CO1: Analyze the classical political thought of Plato, Aristotle, and Aquinas, understanding their views on justice, governance, and the ideal state.	CO2: Critically evaluate the modern political theories of Machiavelli, Hobbes, Locke, and Rousseau, focusing on their conceptions of power, consent, and individual rights.	CO3: Compare and contrast the utilitarian and socialist perspectives of thinkers like Bentham, Mill, Marx, and Laski, understanding their impact on social and political reforms.	CO4: Apply the insights of Western political thinkers to analyze contemporary political issues like democracy, equality, and social justice.	CO5: Develop a critical understanding of different political ideologies and their relevance to the modern world.
B.A. Part-III	International Relations since World War -II and Indian Foreign Policy	CO1: Analyze the major developments in international relations after World War II, including the Cold War, the collapse of the Soviet Union, and the rise of globalization.	CO2: Evaluate the role and functioning of the United Nations in promoting international peace and security, understanding its strengths and limitations.	CO3: Explain the key determinants and principles of Indian foreign policy, including non-alignment, the Look East Policy, and relations with major powers.	CO4: Analyze contemporary trends and issues in international politics, including human rights, environmental challenges, and terrorism, and assess their impact on India.	

B.A. Political Science Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	**PO1: Demonstrate a comprehensive understanding of key concepts, theories, and institutions in political science.**	**PSO1: Analyze the historical and contemporary development of the Indian political system and its key institutions.**	**PEO1: Develop critical thinking and analytical skills to examine political phenomena from diverse perspectives.**
PO2/PSO2/PEO2	**PO2: Analyze political processes and events critically, applying relevant theoretical frameworks.**	**PSO2: Evaluate the role of political thinkers and leaders in shaping Indian political thought and practice.**	**PEO2: Foster an understanding of the historical, theoretical, and contemporary dimensions of political systems and ideologies.**
PO3/PSO3/PEO3	**PO3: Evaluate the strengths and weaknesses of different political systems and ideologies.**	**PSO3: Critically examine contemporary challenges faced by the Indian political system and propose potential solutions.**	**PEO3: Equip graduates with the knowledge and skills to effectively participate in democratic processes and contribute to informed citizenship.**
PO4/PSO4/PEO4	**PO4: Communicate effectively, both orally and in writing, on political issues and arguments.**	**PSO4: Understand the determinants and principles of Indian foreign policy and analyze its role in the international arena.**	**PEO4: Cultivate a global perspective on international relations and India's foreign policy, promoting understanding and cooperation across borders.**
PO5/PSO5/PEO5	**PO5: Conduct research effectively, using appropriate methodologies and information sources.**	**PSO5: Apply the knowledge and skills gained in political science to contribute to informed citizenship and democratic participation in India.**	**PEO5: Prepare graduates for careers in various fields, including government, civil society, education, and research, by providing a strong foundation in political science.**
PO6	**PO6: Engage in informed and constructive dialogue on political issues with diverse perspectives.**		

Mapping of Course Outcomes of all courses of B.A.Political Science with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives				
Course Outcomes	**Program Outcomes**	**Program Specific Outcomes**	**Program Educational Objectives**	**Level**
B.A. Part-I Paper I:Foundation of Political Science				
CO1: Explain the evolution and contemporary perspectives of political science.	PO1, PO2	PSO1	PEO1, PEO4	Understand (Medium)
CO2: Analyze the relationship of political science with other social sciences and key concepts like power, authority, and legitimacy.	PO1, PO2, PO3	PSO1	PEO1, PEO2	Analyze (Medium)
CO3: Critically evaluate different political systems, including democracy and dictatorship, and their development and modernization process.	PO1, PO2, PO3	PSO1	PEO1, PEO2	Evaluate (High)
CO4: Compare and contrast major political ideologies like liberalism, Marxism, and feminism, understanding their historical context and impact.	PO1, PO2, PO3	PSO1	PEO1, PEO2, PEO4	Analyze (High)
CO5: Apply theoretical frameworks to analyze current political trends and issues, including rule of law, constitutionalism, and the role of organs of government.	PO1, PO2, PO3, PO6	PSO1	PEO1, PEO2, PEO3	Apply (High)
B.A. Part-I Paper-II: Representative Indian Political Thinkers				
CO1: Analyze the key ideas and contributions of prominent Indian political thinkers like Manu, Kautilya, and Shukra, in the context of their historical periods.	PO1, PO2, PO3	PSO2	PEO1, PEO2	Analyze (Medium)
CO2: Evaluate the impact of social reformers and leaders like Raja Rammohan Roy and Swami Dayananda Saraswati on the evolution of Indian political thought.	PO1, PO2, PO3	PSO2	PEO1, PEO2, PEO3	Evaluate (Medium)
CO3: Critically examine the perspectives of national movement leaders like Gandhi, Nehru, and Ambedkar on issues like independence, democracy, and social justice.	PO1, PO2, PO3, PO6	PSO2, PSO3	PEO1, PEO2, PEO3	Evaluate (High)
CO4: Compare and contrast the diverse ideologies and approaches of different Indian political thinkers, understanding their influence on contemporary India.	PO1, PO2, PO3	PSO2	PEO1, PEO2	Analyze (Medium)
CO5: Apply the insights of Indian political thinkers to analyze current social and political challenges in India.	PO1, PO2, PO3, PO6	PSO2, PSO3	PEO1, PEO2, PEO3	Apply (High)
B.A. Part-II Paper-I: Selected Political Systems				
CO1: Compare and contrast the key features of political systems in Britain, U.S.A., China, Japan, and Switzerland, focusing on their legislatures, executives, judiciaries, and party systems.	PO1, PO2, PO3		PEO1, PEO2, PEO4	Analyze (Medium)
CO2: Analyze the historical development and current functioning of each political system, identifying their strengths, weaknesses, and unique characteristics.	PO1, PO2, PO3		PEO1, PEO2, PEO4	Analyze (High)
CO3: Apply comparative frameworks to understand the impact of political institutions and processes on governance, citizen participation, and policy outcomes.	PO1, PO2, PO3, PO6		PEO1, PEO2, PEO4	Apply (High)
CO4: Evaluate the challenges and opportunities faced by each political system in the context of globalization and contemporary political trends.	PO1, PO2, PO3		PEO1, PEO2, PEO4	Evaluate (High)
CO5: Draw informed conclusions about the effectiveness and legitimacy of different political models based on comparative analysis.	PO1, PO2, PO3, PO6		PEO1, PEO2, PEO4	Evaluate (High)
B.A. Part-II Paper-II: Indian Political System				
CO1: Explain the historical context and key events that led to the rise of nationalism and the formation of the Indian National Congress and Muslim League.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Understand (Medium)
CO2: Analyze the evolution of the Indian Constitution, including the Government of India Acts, the Constituent Assembly, and key features like federalism, fundamental rights, and directive principles.	PO1, PO2, PO3	PSO1	PEO1, PEO2, PEO3	Analyze (High)
CO3: Evaluate the structure and functions of key institutions in the Indian political system, including the Union Executive, Parliament, Supreme Court, and Election Commission.	PO1, PO2, PO3	PSO1	PEO1, PEO2, PEO3	Analyze (High)
CO4: Analyze the challenges faced by the Indian political system, including regionalism, casteism, communalism, and Naxalism, and assess potential solutions.	PO1, PO2, PO3, PO6	PSO1, PSO3	PEO1, PEO2, PEO3	Evaluate (High)
CO5: Explain the significance of Panchayati Raj and municipal governance in India and evaluate their role in promoting democracy and development.	PO1, PO2, PO3, PO6	PSO1, PSO3	PEO1, PEO2, PEO3	Analyze (High)
B.A. Part-III Paper-I: Representative Western Political Thinkers				
CO1: Analyze the classical political thought of Plato, Aristotle, and Aquinas, understanding their views on justice, governance, and the ideal state.	PO1, PO2, PO3		PEO1, PEO2, PEO4	Analyze (High)
CO2: Critically evaluate the modern political theories of Machiavelli, Hobbes, Locke, and Rousseau, focusing on their conceptions of power, consent, and individual rights.	PO1, PO2, PO3		PEO1, PEO2, PEO4	Evaluate (High)
CO3: Compare and contrast the utilitarian and socialist perspectives of thinkers like Bentham, Mill, Marx, and Laski, understanding their impact on social and political reforms.	PO1, PO2, PO3		PEO1, PEO2, PEO4	Analyze (High)
CO4: Apply the insights of Western political thinkers to analyze contemporary political issues like democracy, equality, and social justice.	PO1, PO2, PO3, PO6		PEO1, PEO2, PEO4	Apply (High)
CO5: Develop a critical understanding of different political ideologies and their relevance to the modern world.	PO1, PO2, PO3, PO6		PEO1, PEO2, PEO4	Evaluate (High)
B.A. Part-III Paper-II: International Relations since World War -II and Indian Foreign Policy				
CO1: Analyze the major developments in international relations after World War II, including the Cold War, the collapse of the Soviet Union, and the rise of globalization.	PO1, PO2	PSO4	PEO1, PEO2, PEO4	Analyze (High)
CO2: Evaluate the role and functioning of the United Nations in promoting international peace and security, understanding its strengths and limitations.	PO1, PO2, PO3	PSO4	PEO1, PEO2, PEO4	Evaluate (High)
CO3: Explain the key determinants and principles of Indian foreign policy, including non-alignment, the Look East Policy, and relations with major powers.	PO1, PO2, PO3	PSO4	PEO1, PEO2, PEO4	Analyze (High)
CO4: Analyze contemporary trends and issues in international politics, including human rights, environmental challenges, and terrorism, and assess their impact on India.	PO1, PO2, PO3, PO6	PSO4	PEO1, PEO2,	

B.A. History Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.A.Part-I	Paper I: HISTORY OF INDIA (FROM THE BEGINNING UPTO 1200 A.D.)	CO1: Analyze the major sources of the history of India upto 1200 A.D., including archaeological evidence, literary sources, and oral traditions.	CO2: Explain the origins, extent, salient features, decline, and continuity of the Indus-Saraswati civilization, drawing conclusions from archaeological findings and textual references.	CO3: Analyze the key features of the Vedic age, including Vedic literature, polity, society, economy, and religion, and assess its impact on subsequent Indian history and cultural development.	CO4: Compare and contrast the rise and development of Janapadas and Mahajanapadas, monarchies, and republics in ancient India, considering factors like economic, political, and social conditions.	CO5: Evaluate the origins, teachings, contributions, and spread of Jainism and Buddhism in India, analyzing their impact on society, art, and philosophical thought.
B.A.Part-I	Paper II: HISTORY OF RAJASTHAN (FROM EARLIEST TIMES TO 1956 A.D.)	CO1: Discuss the different sources available for studying the history of Rajasthan, including archaeological remains, inscriptions, literary works, and folklore.	CO2: Analyze the characteristics and significance of Palaeolithic and Mesolithic cultures in Rajasthan, focusing on their tools, settlements, and social organization.	CO3: Evaluate the extent and characteristics of Chalcolithic and Copper age cultures in Rajasthan, like Aher, Balathal, and Ganeshwar, considering their trade networks and technological advancements.	CO4: Explain the unique features of the Kalibangan culture and its relationship with the Indus-Saraswati civilization, analyzing shared elements and regional variations.	CO5: Assess the role of Matsya Janapada and Republican Tribes in shaping the political and social landscape of early Rajasthan, highlighting their cultural contributions and resistance to external powers.
B.A.Part-II	Paper I: HISTORY OF MEDIEVAL INDIA (c. 1200-1761 A.D.)	CO1: Analyze the various sources available for studying the Delhi Sultanate period, including chronicles, administrative documents, and literary works.	CO2: Evaluate the impact of Turkish invasions and Rajput resistance on the political landscape of medieval India, considering strategic factors and long-term consequences.	CO3: Explain the establishment, consolidation, and administrative features of the Delhi Sultanate, including contributions of rulers like Khalji and Tughlaq dynasties, and assess their strengths and weaknesses.	CO4: Analyze the growth and impact of Provincial kingdoms like the Bahamani and Vijayanagar kingdoms on the cultural and political diversity of medieval India, considering their artistic achievements and regional alliances.	CO5: Explain the sources and foundations of the Mughal Empire, focusing on the reigns of Akbar and his successors, and evaluate their policies towards different religious groups and regional powers.
B.A.Part-II	Paper II: MAIN TRENDS IN THE CULTURAL HISTORY OF INDIA	CO1: Define and discuss the essence and characteristics of Indian Culture, highlighting its historical development, regional variations, and unifying features.	CO2: Analyze the relationship between religion and culture in India, focusing on the influence of Vedic religion, Buddhism, Jainism, Vaishnavism, Saivism, Bhakti Movement, Islam, and Sufism on Indian society, artistic expression, and social reform movements.	CO3: Explain the contribution of Upanishadic thought and Bhagvadgita to Indian philosophy and culture, and their enduring relevance in contemporary times, considering their emphasis on self-knowledge, duty, and ethics.	CO4: Assess the significance of Ramayana, Mahabharata, and Puranas in Indian literature and culture, and their influence on storytelling, ethics, social values, and artistic representations.	CO5: Analyze the contribution of Kalidas, Tulsidas, and Ravindranath Tagore to Indian literature, highlighting their unique styles, genres, and impact on cultural development and social consciousness.
B.A.Part-III	Paper I: HISTORY OF MODERN INDIA (1761-1971 A.D.)	CO1: Analyze the political, economic, and social conditions of India in the mid-eighteenth century, focusing on the decline of the Maratha confederacy and the rise of British power.	CO2: Evaluate the expansion and consolidation of British rule in key regions like Bengal, Mysore, Awadh, Sindh, and Punjab, analyzing the methods employed and local resistance movements.	CO3: Explain the nature and goals of social and religious reform movements in the 19th and early 20th centuries, such as Brahmo Samaj, Arya Samaj, Ramakrishna Mission, and the influence of figures like Raja Ram Mohan Roy and Vivekananda.	CO4: Analyze the development of the Indian National Congress, its various phases (Moderates, Extremists, Gandhian era), and strategies used in the struggle for independence, including Non-Cooperation, Civil Disobedience, and Quit India Movement.	CO5: Evaluate the impact of World Wars I and II on India, and assess the significance of events like the Government of India Acts, Partition of India, and the role of various leaders like Subhash Chandra Bose, Bhagat Singh, and Jawaharlal Nehru in the freedom struggle.
B.A.Part-III	Paper II: HISTORY OF MODERN WORLD (1500-2000 A.D.)	CO1: Analyze the causes and consequences of the Renaissance and its impact on European society, art, and intellectual thought.	CO2: Evaluate the significance of the Reformation and Counter-Reformation in shaping religious and political landscape of Europe.	CO3: Explain the economic changes leading from Feudalism to Capitalism, including the rise of merchant class, urbanization, and exploration.	CO4: Assess the causes, nature, and consequences of the American Revolution and its influence on other independence movements.	CO5: Analyze the causes, main events, and impact of the French Revolution, including the rise and fall of Napoleon Bonaparte, and its implications for democracy and republicanism.

B.A. History Program Summary Sheet:			
S.NO.	**Programme Outcomes (POs)**	**Programme Specific Outcomes (PSOs)**	**Programme Educational Objectives (PEOs)**
PO1/PSO1/PEO1	**PO1: Apply historical knowledge and critical thinking skills to analyze complex historical issues, formulate arguments, and draw evidence-based conclusions.**	**PSO1: Deepen understanding of Indian history and culture, from ancient civilizations to the present day, with an emphasis on key events, trends, and figures.**	**PEO1: To produce graduates who are knowledgeable about Indian history and culture, possessing a strong foundation in key historical events, trends, and figures.**
PO2/PSO2/PEO2	**PO2: Communicate effectively in written and oral forms, presenting historical information clearly, concisely, and persuasively to diverse audiences.**	**PSO2: Develop critical thinking and analytical skills in the context of historical events, enabling the evaluation of sources, interpretation of evidence, and formulation of informed judgments.**	**PEO2: To develop graduates who are critical thinkers and problem solvers, capable of analyzing historical information, interpreting evidence, and formulating informed judgments.**
PO3/PSO3/PEO3	**PO3: Work effectively in teams and collaborate with others, including researchers, colleagues, and community members, to achieve common goals.**	**PSO3: Enhance communication and research skills, including the ability to gather and analyze historical data, write effectively about historical topics, and present research findings in a clear and engaging manner.**	**PEO3: To prepare graduates who are effective communicators and collaborators, able to express themselves clearly and concisely in written and oral forms and work effectively with diverse groups of people.**
PO4/PSO4/PEO4	**PO4: Think critically and solve problems creatively, applying historical knowledge and analytical skills to address contemporary challenges and develop innovative solutions.**	**PSO4: Foster a sense of cultural awareness and appreciation for the diversity of India's historical and cultural heritage, recognizing the contributions of different communities and promoting intercultural understanding.**	**PEO4: To foster graduates who are ethical and responsible citizens, upholding academic integrity, respecting diverse viewpoints, and promoting social responsibility.**
PO1/PSO1/PEO5	**PO5: Demonstrate ethical and professional conduct, upholding academic integrity, respecting diverse viewpoints, and promoting social responsibility.**	**PSO5: Prepare students for careers in history, education, research, and other related fields, equipping them with the knowledge, skills, and critical thinking abilities necessary for success in a variety of professional settings.**	**PEO5: To equip graduates with the skills and knowledge necessary for success in a variety of careers, particularly those related to history, education, research, and other fields that benefit from a strong understanding of the past.**

Mapping of Course Outcomes of all courses of B.A. History with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives

Course Outcomes	Program Outcomes	Program Specific Outcomes	Program Educational Objectives	Level
B.A. Part I Paper I: HISTORY OF INDIA (FROM THE BEGINNING UPTO 1200 A.D.)				
CO1: Analyze the major sources of the history of India upto 1200 A.D., including archaeological evidence, literary sources, and oral traditions.	PO1, PO2	None	PEO1, PEO2, PEO3	Analyze (High)
CO2: Explain the origins, extent, salient features, decline, and continuity of the Indus-Saraswati civilization, drawing conclusions from archaeological findings and textual references.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Analyze (High)
CO3: Analyze the key features of the Vedic age, including Vedic literature, polity, society, economy, and religion, and assess its impact on subsequent Indian history and cultural development.	PO1, PO2, PO4	PSO1, PSO4	PEO1, PEO2, PEO3, PEO5	Analyze (High)
CO4: Compare and contrast the rise and development of Janapadas and Mahajanapadas, monarchies, and republics in ancient India, considering factors like economic, political, and social conditions.	PO1, PO2	PSO1	PEO1, PEO2	Compare (Medium)
CO5: Evaluate the origins, teachings, contributions, and spread of Jainism and Buddhism in India, analyzing their impact on society, art, and philosophical thought.	PO1, PO2, PO4	PSO1, PSO4	PEO1, PEO2, PEO3, PEO5	Evaluate (High)
B.A. Part I Paper II: HISTORY OF RAJASTHAN (FROM EARLIEST TIMES TO 1956 A.D.)				
CO1: Discuss the different sources available for studying the history of Rajasthan, including archaeological remains, inscriptions, literary works, and folklore.	PO1, PO2	None	PEO1, PEO2, PEO3	Analyze (High)
CO2: Analyze the characteristics and significance of Palaeolithic and Mesolithic cultures in Rajasthan, focusing on their tools, settlements, and social organization.	PO1, PO2	None	PEO1, PEO2, PEO3	Analyze (High)
CO3: Evaluate the extent and characteristics of Chalcolithic and Copper age cultures in Rajasthan, like Aher, Balathal, and Ganeshwar, considering their trade networks and technological advancements.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Evaluate (High)
CO4: Explain the unique features of the Kalibangan culture and its relationship with the Indus-Saraswati civilization, analyzing shared elements and regional variations.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Analyze (High)
CO5: Assess the role of Matsya Janapada and Republican Tribes in shaping the political and social landscape of early Rajasthan, highlighting their cultural contributions and resistance to external powers.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Analyze (High)
B.A. Part II Paper I: HISTORY OF MEDIEVAL INDIA (c. 1200-1761 A.D.)				
CO1: Analyze the various sources available for studying the Delhi Sultanate period, including chronicles, administrative documents, and literary works.	PO1, PO2	None	PEO1, PEO2, PEO3	Analyze (High)
CO2: Evaluate the impact of Turkish invasions and Rajput resistance on the political landscape of medieval India, considering strategic factors and long-term consequences.	PO1, PO2	None	PEO1, PEO2, PEO3	Evaluate (High)
CO3: Explain the establishment, consolidation, and administrative features of the Delhi Sultanate, including contributions of rulers like Khalji and Tughlaq dynasties, and assess their strengths and weaknesses.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Analyze (High)

CO4: Analyze the growth and impact of Provincial kingdoms like the Bahamani and Vijayanagar kingdoms on the cultural and political diversity of medieval India, considering their artistic achievements and regional alliances.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Analyze (High)
CO5: Explain the sources and foundations of the Mughal Empire, focusing on the reigns of Akbar and his successors, and evaluate their policies towards different religious groups and regional powers.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Analyze (High)
B.A. Part II Paper II: MAIN TRENDS IN THE CULTURAL HISTORY OF INDIA				
CO1: Define and discuss the essence and characteristics of Indian Culture, highlighting its historical development, regional variations, and unifying features.	PO1, PO4	None	PEO1, PEO2, PEO3, PEO5	Define & Discuss (Medium)
CO2: Analyze the relationship between religion and culture in India, focusing on the influence of Vedic religion, Buddhism, Jainism, Vaishnavism, Saivism, Bhakti Movement, Islam, and Sufism on Indian society, artistic expression, and social reform movements.	PO1, PO2, PO4	None	PEO1, PEO2, PEO3, PEO5	Analyze (High)
CO3: Explain the contribution of Upanishadic thought and Bhagvadgita to Indian philosophy and culture, and their enduring relevance in contemporary times, considering their emphasis on self-knowledge, duty, and ethics.	PO1, PO2, PO5	None	PEO1, PEO2, PEO3	Explain (Medium)
CO4: Assess the significance of Ramayana, Mahabharata, and Puranas in Indian literature and culture, and their influence on storytelling, ethics, social values, and artistic representations.	PO1, PO2, PO4	None	PEO1, PEO2, PEO3, PEO5	Assess (High)
CO5: Analyze the contribution of Kalidas, Tulsidas, and Ravindranath Tagore to Indian literature, highlighting their unique styles, genres, and impact on cultural development and social consciousness.	PO1, PO2, PO4	None	PEO1, PEO2, PEO3, PEO5	Analyze (High)
B.A. Part III Paper I: HISTORY OF MODERN INDIA (1761-1971 A.D.)				
CO1: Analyze the political, economic, and social conditions of India in the mid-eighteenth century, focusing on the decline of the Maratha confederacy and the rise of British power.	PO1, PO2	None	PEO1, PEO2, PEO3	Analyze (High)
CO2: Evaluate the expansion and consolidation of British rule in key regions like Bengal, Mysore, Awadh, Sindh, and Punjab, analyzing the methods employed and local resistance movements.	PO1, PO2	None	PEO1, PEO2, PEO3	Evaluate (High)
CO3: Explain the nature and goals of social and religious reform movements in the 19th and early 20th centuries, such as Brahmo Samaj, Arya Samaj, Ramakrishna Mission, and the influence of figures like Raja Ram Mohan Roy and Vivekananda.	PO1, PO2, PO4	None	PEO1, PEO2, PEO3, PEO5	Explain (Medium)
CO4: Analyze the development of the Indian National Congress, its various phases (Moderates, Extremists, Gandhian era), and strategies used in the struggle for independence, including Non-Cooperation, Civil Disobedience, and Quit India Movement.	PO1, PO2	None	PEO1, PEO2, PEO3	Analyze (High)
CO5: Evaluate the impact of World Wars I and II on India, and assess the significance of events like the Government of India Acts, Partition of India, and the role of various leaders like Subhash Chandra Bose, Bhagat Singh, and Jawaharlal Nehru in the freedom struggle.	PO1, PO2	None	PEO1, PEO2, PEO3	Evaluate (High)
B.A. Part III Paper II: HISTORY OF MODERN WORLD (1500-2000 A.D.)				
CO1: Analyze the causes and consequences of the Renaissance and its impact on European society, art, and intellectual thought.	PO1, PO2, PO4	None	PEO1, PEO2, PEO3, PEO5	Analyze (High)

CO2: Evaluate the significance of the Reformation and Counter-Reformation in shaping religious and political landscape of Europe.	**PO1, PO2, PO4**	**None**	**PEO1, PEO2, PEO3, PEO5**	**Evaluate (High)**
CO3: Explain the economic changes leading from Feudalism to Capitalism, including the rise of merchant class, urbanization, and exploration.	**PO1, PO2, PO4**	**None**	**PEO1, PEO2, PEO3, PEO5**	**Explain (Medium)**
CO4: Assess the causes, nature, and consequences of the American Revolution and its influence on other independence movements.	**PO1, PO2, PO4**	**None**	**PEO1, PEO2, PEO3, PEO5**	**Analyze (High)**
CO5: Analyze the causes, main events, and impact of the French Revolution, including the rise and fall of Napoleon Bonaparte, and its implications for democracy and republicanism.	**PO1, PO2, PO4**	**None**	**PEO1, PEO2, PEO3, PEO5**	**Analyze (High)**

B.A. Sociology Course Outcomes Summary Sheet						
Course	**Title**	**Course Outcome 1**	**Course Outcome 2**	**Course Outcome 3**	**Course Outcome 4**	**Course Outcome 5**
B.A. Part-I	**Introduction to Sociology**	**CO1: Define and demonstrate understanding of key concepts of Sociology.**	**CO2: Explain the relationship between Sociology and other social sciences.**	**CO3: Critically analyze the distinction between scientific and humanistic perspectives.**	**CO4: Describe and apply major sociological concepts.**	**CO5: Differentiate between associative and dissociative processes and provide examples.**
B.A. Part-I	**Society in India**	**CO1: Compare and contrast textual and field-view traditions in understanding Indian society.**	**CO2: Analyze the civilization and Marxian approaches to Indian society.**	**CO3: Discuss the structure and functions of key Indian institutions.**	**CO4: Recognize and critically examine major challenges faced by contemporary Indian society.**	**CO5: Apply sociological concepts and theories to investigate and propose solutions to social problems.**
B.A. Part-II	**Social Research Methods**	**CO1: Explain core principles of philosophy of science (objectivity, subjectivity).**	**CO2: Differentiate ethnography from other research methods.**	**CO3: Classify research types (pure/applied) and methods (empirical, historical, etc.).**	**CO4: Distinguish research designs (descriptive, exploratory, etc.) and choose appropriate ones.**	**CO5: Apply sampling techniques and choose data collection tools based on research design.**
B.A. Part-II	**Sociology of Village**	**CO1: Define and trace development of rural sociology, explain key concepts.**	**CO2: Analyze features of village economy and polity, understand their interrelations.**	**CO3: Examine village social structure (family, caste, kinship, gender, religion).**	**CO4: Critically evaluate formal and informal administrative structures in villages (panchayats).**	**CO5: Analyze major processes of change in Indian villages (distress, movements, urbanization, globalization).**
B.A. Part-III	**Sociological Thought**	**CO1: Explain and critically evaluate the key concepts and arguments of classical and contemporary sociological thinkers.**	**CO2: Analyze the contributions of Indian sociologists within the broader context of sociological thought.**	**CO3: Compare and contrast different theoretical perspectives within sociology, identifying their strengths, weaknesses, and areas of application.**	**CO4: Apply sociological theories to contemporary social issues and debates in India and the global context.**	**CO5: Demonstrate an informed understanding of the development and evolution of sociological thought.**
B.A. Part-III	**Introducing Sub Sociologies**	**CO1: Define and differentiate key concepts related to urban society, urbanization, and globalization.**	**CO2: Explain the nature, subject matter, and significance of urban sociology, sociology of development, and sociology of globalization.**	**CO3: Analyze major urban issues like slums, health, and sanitation, applying relevant sociological concepts and theories.**	**CO4, CO5, CO6: Analyze and evaluate the impact of development and globalization on various aspects of society, including displacement, education, gender inequalities, and marginalization.**	**CO7: Apply sociological knowledge to understand and propose solutions to contemporary social problems in India and the global context.**

B.A. Sociology Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	**Develop critical thinking and analytical skills to understand and explain social phenomena.**	**Apply sociological theories and research methods to analyze social issues in India.**	**Graduate as critical thinkers and effective communicators, equipped to analyze and address social challenges in diverse contexts.**
PO2/PSO2/PEO2	**Demonstrate an understanding of different theoretical perspectives within sociology.**	**Apply sociological knowledge to inform policy and development initiatives.**	**Develop a commitment to social justice and equity, and contribute to positive social change through informed action.**
PO3/PSO3/PEO3	**Conduct ethical and rigorous social research.**	**Utilize research skills to investigate and document social realities in India.**	**Possess research and communication skills for pursuing further studies or careers in sociology and related fields.**
PO4/PSO4/PEO4	**Effectively communicate sociological knowledge and insights to diverse audiences.**	**Engage in public discourse and promote informed dialogue on social issues.**	**Cultivate an appreciation for lifelong learning and intellectual inquiry, remaining informed about social issues and adapting to a changing world.**
PO5/PSO5/PEO5	**Demonstrate awareness of ethical considerations in conducting sociological research and engaging with social issues.**	**Adhere to ethical principles in all research and professional activities.**	**Uphold ethical integrity and social responsibility in personal and professional conduct.**

Mapping of Course Outcomes of all courses of B.A. Sociology with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives				
Course Outcomes	**Program Outcomes**	**Program Specific Outcomes**	**Program Educational Objectives**	**Level**
B.A Part I Sociology Paper I: Introduction to Sociology				
CO1: Define and demonstrate understanding of key concepts of Sociology.	PO1, PO2	PSO1	PEO1, PEO2	Understand, Analyze (Moderate)
CO2: Explain the relationship between Sociology and other social sciences.	PO2	PSO1	PEO1, PEO2	Analyze (Moderate)
CO3: Critically analyze the distinction between scientific and humanistic perspectives.	PO2, PO5	PSO1	PEO1, PEO2	Analyze, Evaluate (Moderate)
CO4: Describe and apply major sociological concepts.	PO1, PO2	PSO1	PEO1, PEO2	Understand, Apply (Moderate)
CO5: Differentiate between associative and dissociative processes and provide examples.	PO1, PO2	PSO1	PEO1, PEO2	Analyze, Apply (Moderate)
B.A Part I Sociology Paper II: Society in India				
CO1: Compare and contrast textual and field-view traditions in understanding Indian society.	PO2	PSO1	PEO1, PEO2	Analyze, Compare (Moderate)
CO2: Analyze the civilization and Marxian approaches to Indian society.	PO2	PSO1	PEO1, PEO2	Analyze, Evaluate (Moderate)
CO3: Discuss the structure and functions of key Indian institutions.	PO2	PSO1, PSO2	PEO1, PEO2	Analyze, Apply (Moderate)
CO4: Recognize and critically examine major challenges faced by contemporary Indian society.	PO1, PO2, PO5	PSO1, PSO2	PEO1, PEO2	Analyze, Evaluate (Moderate)
CO5: Apply sociological concepts and theories to investigate and propose solutions to social problems.	PO1, PO2, PO3, PO4	PSO1, PSO2	PEO1, PEO2, PEO3	Apply, Analyze, Create (Moderate-High)
B.A Part II Sociology Paper I: Social Research Methods				
CO1: Explain core principles of philosophy of science (objectivity, subjectivity).	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Understand, Analyze (Moderate)
CO2: Differentiate ethnography from other research methods.	PO1, PO2	PSO1	PEO1, PEO2, PEO3	Analyze, Evaluate (Moderate)
CO3: Classify research types (pure/applied) and methods (empirical, historical, etc.).	PO1, PO2	PSO1, PSO3	PEO1, PEO2, PEO3	Understand, Analyze (Moderate)
CO4: Distinguish research designs (descriptive, exploratory, etc.) and choose appropriate ones.	PO1, PO2	PSO1, PSO3	PEO1, PEO2, PEO3	Apply, Analyze (Moderate)
CO5: Apply sampling techniques and choose data collection tools based on research design.	PO1, PO3	PSO1, PSO3	PEO1, PEO2, PEO3	Apply, Analyze (Moderate-High)
B.A Part II Sociology Paper II: Sociology of Village				
CO1: Define and trace development of rural sociology, explain key concepts.	PO1, PO2	PSO2	PEO1, PEO2	Understand, Analyze (Moderate)
CO2: Analyze features of village economy and polity, understand their interrelations.	PO1, PO2	PSO2	PEO1, PEO2	Analyze, Evaluate (Moderate)
CO3: Examine village social structure (family, caste, kinship, gender, religion).	PO1, PO2	PSO2	PEO1, PEO2	Analyze, Evaluate (Moderate)

CO4: Critically evaluate formal and informal administrative structures in villages (panchayats).	PO1, PO2	PSO2	PEO1, PEO2	Analyze, Evaluate (Moderate)
CO5: Analyze major processes of change in Indian villages (distress, movements, urbanization, globalization).	PO1, PO2	PSO2	PEO1, PEO2	Analyze, Evaluate (Moderate)
B.A Part III Sociology Paper I: Sociological Thought				
CO1: Explain and critically evaluate the key concepts and arguments of classical and contemporary sociological thinkers.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Analyze & Evaluate (Moderate-High)
CO2: Analyze the contributions of Indian sociologists within the broader context of sociological thought.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Analyze & Evaluate (Moderate-High)
CO3: Compare and contrast different theoretical perspectives within sociology, identifying their strengths, weaknesses, and areas of application.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Analyze & Evaluate (Moderate-High)
CO4: Apply sociological theories to contemporary social issues and debates in India and the global context.	PO1, PO2, PO4	PSO1, PSO2, PSO4	PEO1, PEO2, PEO4	Apply, Analyze & Evaluate (High)
CO5: Demonstrate an informed understanding of the development and evolution of sociological thought.	PO1, PO2	PSO1, PSO2	PEO1, PEO2	Understand & Analyze (Moderate)
B.A Part III Sociology Paper II: Introducing Sub Sociologies				
CO1: Define and differentiate key concepts related to urban society, urbanization, and globalization.	PO1	PSO1	PEO1, PEO4	Understand & Analyze (Moderate)
CO2: Explain the nature, subject matter, and significance of urban sociology, sociology of development, and sociology of globalization.	PO1, PO2	PSO1, PSO2	PEO1, PEO2, PEO4	Understand & Analyze (Moderate)
CO3: Analyze major urban issues like slums, health, and sanitation, applying relevant sociological concepts and theories.	PO1, PO2, PO4	PSO1, PSO2, PSO4	PEO1, PEO2, PEO4	Apply, Analyze & Evaluate (Moderate-High)
CO4, CO5, CO6: Analyze and evaluate the impact of development and globalization on various aspects of society, including displacement, education, gender inequalities, and marginalization.	PO1, PO2, PO4	PSO1, PSO2, PSO4	PEO1, PEO2, PEO3, PEO4	Apply, Analyze & Evaluate (High)
CO7: Apply sociological knowledge to understand and propose solutions to contemporary social problems in India and the global context.	PO1, PO2, PO4	PSO1, PSO2, PSO4	PEO1, PEO2, PEO3, PEO4	Apply, Analyze & Create (High)

B.A. Economics Course Outcomes Summary Sheet

Course	Title	Course Outcome 1	Course Outcome 2	Course Outcome 3	Course Outcome 4	Course Outcome 5
B.A. Part-I	Microeconomic Theory	CO 1: Explain the nature, scope, and methodology of economics.	CO 2: Analyze consumer behavior using utility analysis and indifference curves.	CO 3: Explain production theory, cost curves, and optimal factor combinations.	CO 4: Discuss factor pricing theories and market structures.	CO 5: Apply microeconomic principles to real-world scenarios.
B.A. Part-I	Indian Economy	CO 1: Describe the basic features and current state of the Indian economy.	CO 2: Analyze trends and composition of national income in India.	CO 3: Assess the role, importance, and challenges of agriculture in the Indian economy.	CO 4: Explain the role, strategy, and challenges of the Indian industry.	CO 5: Analyze the role of foreign trade in the Indian economy.
B.A. Part-II	Introductory Macroeconomics	CO 1: Explain core macroeconomic concepts.	CO 2: Analyze macroeconomic variables.	CO 3: Evaluate the role of money in the economy.	CO 4: Explain income and employment determination.	CO 5: Analyze the role of central banks and commercial banks.
B.A. Part-II	Elements of Statistics and Mathematics	CO 1: Apply mathematical tools to economic analysis.	CO 2: Understand the fundamentals of statistics.	CO 3: Calculate and interpret measures of central tendency and dispersion.	CO 4: Perform basic statistical analysis.	
B.A. Part-II	History of Economic Thought	CO 1: Explain the economic ideologies of key historical figures.	CO 2: Critically analyze the critiques of classical economics.	CO 3: Explain the theories of Karl Marx.	CO 4: Provide a historical overview of marginalism and neo-classical economics.	CO 5: Analyze the economic thoughts of Indian thinkers.
B.A. Part-III	Introduction to International Trade, Development and Public Economics	CO 1: Explain the features of international trade and gains from trade.	CO 2: Analyze the foreign exchange market and exchange rate.	CO 3: Evaluate the concepts of economic growth and development.	CO 4: Explain the nature and scope of public finance.	CO 5: Apply economic principles to analyze real-world issues.
B.A. Part-III	Application of Mathematics in Economics	CO 1: Apply differential and integral calculus to economic problems.	CO 2: Analyze consumer behavior.	CO 3: Analyze firm behavior.	CO 4: Solve linear programming problems.	CO 5: Apply input-output analysis and game theory.
B.A. Part-III	Environmental Economics	CO 1: Explain the relationship between economics and the environment.	CO 2: Analyze the link between development and the environment.	CO 3: Discuss international environmental policies and agreements.	CO 4: Evaluate environmental governance in India.	CO 5: Apply economic principles to environmental issues.
B.A. Part-III	Economy of Rajasthan	CO 1: Analyze the position of Rajasthan within the Indian economy.	CO 2: Evaluate natural resource endowments and state domestic product.	CO 3: Explain agricultural development in Rajasthan.	CO 4: Assess infrastructure and industrial development in Rajasthan.	CO 5: Evaluate economic planning and development in Rajasthan.

B.A. Economics Program Summary Sheet:			
S.NO.	**Program Outcomes (POs):**	**Program Specific Outcomes (PSOs):**	**Program Educational Objectives (PEOs):**
PO1/PSO1/PEO1	**Apply economic theory and quantitative methods to analyze real-world economic problems.**	**Analyze the impact of government policies on economic outcomes.**	**Graduates will be able to apply economic theory and quantitative methods to analyze and solve real-world economic problems.**
PO2/PSO2/PEO2	**Critically evaluate different economic perspectives and theories.**	**Evaluate the effectiveness of different development strategies.**	**Graduates will be able to demonstrate ethical and professional behavior in the workplace.**
PO3/PSO3/PEO3	**Communicate economic concepts effectively to a variety of audiences.**	**Communicate economic information and analysis to policymakers and the public.**	**Graduates will be able to pursue lifelong learning in the field of economics.**
PO4/PSO4	**Demonstrate ethical and professional behavior in the workplace.**	**Demonstrate ethical behavior in the conduct of economic research and analysis.**	
PO5/PSO5	**Adapt to and thrive in a changing global economy.**	**Analyze the impact of globalization on the Indian economy.**	
PO6	**Pursue lifelong learning in the field of economics.**	**Stay informed about current economic issues and trends.**	

Mapping of Course Outcomes of all courses of B.A.Economics with Program Outcomes, Program Specific Outcomes, and Program Educational Objectives				
Course Outcomes	**Program Outcomes**	**Program Specific Outcomes**	**Program Educational Objectives**	**Level**
B.A Part I Economics Paper 1: Microeconomic Theory				
CO 1: Explain the nature, scope, and methodology of economics.	PO 1, PO 2, PO 6	PSO 1, PSO 2, PSO 5	PEO 1, PEO 3	Understand/Analyze (Moderate)
CO 2: Analyze consumer behavior using utility analysis and indifference curves.	PO 1, PO 2, PO 6	PSO 1, PSO 2, PSO 5	PEO 1, PEO 3	Analyze/Evaluate (Moderate)
CO 3: Explain production theory, cost curves, and optimal factor combinations.	PO 1, PO 2, PO 6	PSO 1, PSO 2, PSO 5	PEO 1, PEO 3	Analyze/Evaluate (Moderate)
CO 4: Discuss factor pricing theories and market structures.	PO 1, PO 2, PO 6	PSO 1, PSO 2, PSO 5	PEO 1, PEO 3	Analyze/Evaluate (Moderate)
CO 5: Apply microeconomic principles to real-world scenarios.	PO 1, PO 2, PO 3, PO 5, PO 6	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5	PEO 1, PEO 2, PEO 3	Apply/Analyze (Moderate)
B.A Part I Economics Paper 2: Indian Economy				
CO 1: Describe the basic features and current state of the Indian economy.	PO 1, PO 2, PO 6	PSO 1, PSO 2, PSO 5	PEO 1, PEO 3	Understand/Analyze (Moderate)
CO 2: Analyze trends and composition of national income in India.	PO 1, PO 2, PO 6	PSO 1, PSO 2, PSO 5	PEO 1, PEO 3	Analyze/Evaluate (Moderate)
CO 3: Assess the role, importance, and challenges of agriculture in the Indian economy.	PO 1, PO 2, PO 5, PO 6	PSO 1, PSO 2, PSO 4, PSO 5	PEO 1, PEO 2, PEO 3	Analyze/Evaluate (Moderate)
CO 4: Explain the role, strategy, and challenges of the Indian industry.	PO 1, PO 2, PO 5, PO 6	PSO 1, PSO 2, PSO 4, PSO 5	PEO 1, PEO 2, PEO 3	Analyze/Evaluate (Moderate)
CO 5: Analyze the role of foreign trade in the Indian economy.	PO 1, PO 2, PO 5, PO 6	PSO 1, PSO 2, PSO 4, PSO 5	PEO 1, PEO 2, PEO 3	Analyze/Evaluate (Moderate)
B.A Part II Economics Paper-I: Introductory Macroeconomics				
CO 1: Explain core macroeconomic concepts.	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Understand/Analyze (Moderate)
CO 2: Analyze macroeconomic variables.**	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 3: Evaluate the role of money in the economy.**	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 4: Explain income and employment determination.**	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 5: Analyze the role of central banks and commercial banks.**	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
B.A Part II Economics Paper-II(a): Elements of Statistics and Mathematics				
CO 1: Apply mathematical tools to economic analysis.	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Apply/Analyze (Moderate)
CO 2: Understand the fundamentals of statistics.**	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Understand/Analyze (Moderate)
CO 3: Calculate and interpret measures of central tendency and dispersion.**	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Apply/Analyze (Moderate)
CO 4: Perform basic statistical analysis.**	PO 1, PO 2	PSO 1, PSO 2	PEO 1, PEO 2	Apply/Analyze (Moderate)
B.A Part II Economics Paper-II(b): History of Economic Thought				
CO 1: Explain the economic ideologies of key historical figures.	PO 2, PO 5	PSO 2, PSO 4	PEO 1, PEO 2	Understand/Analyze (Moderate)
CO 2: Critically analyze the critiques of classical economics.**	PO 2, PO 5	PSO 2, PSO 4	PEO 1, PEO 2	Evaluate/Analyze (Moderate)
CO 3: Explain the theories of Karl Marx.**	PO 2, PO 5	PSO 2, PSO 4	PEO 1, PEO 2	Understand/Analyze (Moderate)
CO 4: Provide a historical overview of marginalism and neo-classical economics.**	PO 2, PO 5	PSO 2, PSO 4	PEO 1, PEO 2	Understand/Analyze (Moderate)
CO 5: Analyze the economic thoughts of Indian thinkers.**	PO 2, PO 5	PSO 2, PSO 4	PEO 1, PEO 2	Understand/Analyze (Moderate)
B.A Part III Economics Paper I: Introduction to International Trade, Development and Public Economics				
CO 1: Explain the features of international trade and gains from trade.	PO 1, PO 5	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 2: Analyze the foreign exchange market and exchange rate.	PO 1, PO 5	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 3: Evaluate the concepts of economic growth and development.	PO 1, PO 2	PSO 6	PEO 1, PEO 2, PEO 3	Analyze/Evaluate (Moderate)
CO 4: Explain the nature and scope of public finance.	PO 1, PO 2	PSO 1	PEO 1, PEO 2	Analyze/Understand (Moderate)
CO 5: Apply economic principles to analyze real-world issues.	PO 1, PO 2, PO 3	PSO 1, PSO 2, PSO 3, PSO 6	PEO 1, PEO 2, PEO 3	Apply/Analyze/Communicate (Moderate)
B.A Part III Economics:Paper II(a): Application of Mathematics in Economics				
CO 1: Apply differential and integral calculus to economic problems.	PO 1	PSO 1, PSO 4	PEO 1	Apply/Analyze (Moderate)
CO 2: Analyze consumer behavior.	PO 1	PSO 1, PSO 4	PEO 1	Analyze/Evaluate (Moderate)
CO 3: Analyze firm behavior.	PO 1	PSO 1, PSO 4	PEO 1	Analyze/Evaluate (Moderate)
CO 4: Solve linear programming problems.	PO 1	PSO 1, PSO 4	PEO 1	Apply/Analyze (Moderate)

CO 5: Apply input-output analysis and game theory.	PO 1	PSO 1, PSO 4	PEO 1	Analyze/Evaluate (Moderate)
B.A Part III Economics:Paper II(b): Environmental Economics				
CO 1: Explain the relationship between economics and the environment.	PO 1, PO 2	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 2: Analyze the link between development and the environment.	PO 1, PO 2	PSO 4, PSO 6	PEO 1, PEO 2, PEO 3	Analyze/Evaluate (Moderate)
CO 3: Discuss international environmental policies and agreements.	PO 1, PO 2, PO 5	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 4: Evaluate environmental governance in India.	PO 1, PO 2	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 5: Apply economic principles to environmental issues.	PO 1, PO 2	PSO 4, PSO 6	PEO 1, PEO 2, PEO 3	Analyze/Evaluate (Moderate)
B.A Part III Economics:Paper II(c): Economy of Rajasthan				
CO 1: Analyze the position of Rajasthan within the Indian economy.	PO 1, PO 5	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 2: Evaluate natural resource endowments and state domestic product.	PO 1, PO 2	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 3: Explain agricultural development in Rajasthan.	PO 1, PO 2	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 4: Assess infrastructure and industrial development in Rajasthan.	PO 1, PO 2	PSO 4	PEO 1, PEO 2	Analyze/Evaluate (Moderate)
CO 5: Evaluate economic planning and development in Rajasthan.	PO 1, PO 2	PSO 4	PEO 1, PEO 3	Analyze/Evaluate (Moderate)

बी.ए. हिंदी साहित्य पाठ्यक्रम उद्देश्य सारांश तालिका

पाठ्यक्रम	विषय क्षेत्र	पाठ्यक्रम उद्देश्य (सीओ) 1	पाठ्यक्रम उद्देश्य (सीओ) 2	पाठ्यक्रम उद्देश्य (सीओ) 3	पाठ्यक्रम उद्देश्य (सीओ) 4	पाठ्यक्रम उद्देश्य (सीओ) 5
बीए प्रथम वर्ष	प्रथम प्रश्न पत्र	1. भाषा और व्याकरण - ग्रंथों में प्रयुक्त भाषा, व्याकरण, शब्द चयन, वाक्य रचना और भाषाई विविधता का अध्ययन।	2. साहित्यिक रचनाओं का विश्लेषण - विषय-वस्तु, पात्र, कथा, शैली और अलंकारिकता का विश्लेषण।	3. भक्ति और आध्यात्मिकता - भक्ति भावना, आध्यात्मिक शिक्षा, धार्मिक विचार, समाज और धर्म, नैतिक शिक्षा का अध्ययन।	4. सामाजिक और सांस्कृतिक संदर्भ - सामाजिक मुद्दे, सांस्कृतिक परंपराएं, ऐतिहासिक संदर्भ, मानवीय मूल्य और जीवन दर्शन का अध्ययन।	5. तुलनात्मक अध्ययन - अन्य साहित्यिक रचनाओं, भाषाओं, संस्कृतियों, विचारधाराओं और कालखंडों के साथ तुलना।
बीए प्रथम वर्ष	द्वितीय प्रश्न पत्र	1. उपन्यास का अध्ययन - विषय-वस्तु, पात्र, कथा, शैली और अलंकारिकता का अध्ययन।	2. कहानी का अध्ययन - विषय-वस्तु, पात्र, कथा, शैली और अलंकारिकता का अध्ययन।	3. गद्य की विधाओं का अध्ययन - डायरी, संस्मरण, यात्रा, रेखा चित्र का परिचय, भाषा, शैली, विषय-वस्तु और लेखकों का अध्ययन।	4. हिंदी गद्य का विकास - प्राचीन काल से आधुनिक काल तक विकास का अध्ययन, विभिन्न कालखंडों की विशेषताएं, प्रमुख लेखकों का योगदान, सामाजिक और सांस्कृतिक प्रभाव, भाषा का विकास।	5. हिंदी उपन्यास और कहानी का स्वरूप और परिभाषा - परिभाषाएं, स्वरूप, तत्व, भेद और उदाहरणों का अध्ययन।
बीए द्वितीय वर्ष	प्रथम प्रश्न पत्र (रीतिकालीन)	1. विषय-वस्तु: रीतिकालीन कविता में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	2. भाषा: रीतिकालीन कविता में प्रयुक्त भाषा की विशेषताओं का अध्ययन करें।	3. शैली: रीतिकालीन कविता में प्रयुक्त विभिन्न शैलियों का अध्ययन करें।	4. अलंकार: रीतिकालीन कविता में प्रयुक्त विभिन्न अलंकारों का अध्ययन करें।	5. प्रमुख कवियों का अध्ययन: रीतिकाल के प्रमुख कवियों और उनकी रचनाओं का अध्ययन करें।
बीए द्वितीय वर्ष	द्वितीय प्रश्न पत्र (नाटक एवं एकांकी):	1. विषय-वस्तु: नाटक में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	2. पात्र: नाटक में वर्णित विभिन्न पात्रों के चरित्र चित्रण और विकास का अध्ययन करें।	3. कथा: नाटक में वर्णित कथाओं का सार, संरचना और विकास का अध्ययन करें।	4. शैली: नाटक में प्रयुक्त विभिन्न शैलियों और उनके प्रभाव का अध्ययन करें।	5. आलंकारिकता: नाटक में प्रयुक्त विभिन्न अलंकारों और उनके प्रभाव का अध्ययन करें।
बीए तृतीय वर्ष	प्रथम प्रश्न पत्र (आधुनिक काव्य)	1. विषय-वस्तु: आधुनिक काव्य में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	2. भाषा: आधुनिक काव्य में प्रयुक्त भाषा की विशेषताओं का अध्ययन करें।	3. शैली: आधुनिक काव्य में प्रयुक्त विभिन्न शैलियों का अध्ययन करें।	4. अलंकार: आधुनिक काव्य में प्रयुक्त विभिन्न अलंकारों का अध्ययन करें।	5. प्रमुख कवियों का अध्ययन: आधुनिक काल के प्रमुख कवियों और उनकी रचनाओं का अध्ययन करें।
बीए तृतीय वर्ष	द्वितीय प्रश्न पत्र (निबंध तथा काव्यशास्त्र):	1. विषय-वस्तु: निबंध में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	2. भाषा: निबंध में प्रयुक्त भाषा की विशेषताओं का अध्ययन करें।	3. शैली: निबंध में प्रयुक्त विभिन्न शैलियों का अध्ययन करें।	4. विचारों का क्रम: निबंध में विचारों को क्रमबद्ध तरीके से प्रस्तुत करने की तकनीक का अध्ययन करें।	5. प्रमुख निबंधकारों का अध्ययन: आधुनिक हिंदी साहित्य के प्रमुख निबंधकारों और उनकी रचनाओं का अध्ययन करें।

बी.ए. हिंदी साहित्य कार्यक्रम उद्देश्य सारांश तालिका

क्रम सं.	कार्यक्रम के उद्देश्य (पीओ):	कार्यक्रम विशिष्ट परिणाम (पीएसओ):	कार्यक्रम शैक्षिक उद्देश्य (पीईओ):
पीओ 1/पीएसओ 1/पीईओ 1	1. हिंदी भाषा और साहित्य का गहन ज्ञान और समझ विकसित करना।	1. विद्यार्थी आधुनिक और प्राचीन हिंदी साहित्य की प्रमुख धाराओं, प्रवृत्तियों और लेखकों की पहचान और विश्लेषण करने में सक्षम होंगे।	1. विद्यार्थी आजीवन हिंदी भाषा और साहित्य के अध्ययन और सराहना के लिए प्रतिबद्ध होंगे।
पीओ 2/पीएसओ 2/पीईओ 2	2. आलोचनात्मक सोच और विश्लेषणात्मक कौशल का विकास करना।	2. विद्यार्थी साहित्यिक कृतियों की गहन व्याख्या और मूल्यांकन करने में सक्षम होंगे।	2. विद्यार्थी रचनात्मक और विश्लेषणात्मक कौशल विकसित करेंगे जो उन्हें विभिन्न क्षेत्रों में सफल होने में सक्षम बनाएंगे।
पीओ 3/पीएसओ 3/पीईओ 3	3. संचार कौशल, लिखित और मौखिक दोनों का विकास करना।	3. विद्यार्थी विभिन्न शैलियों में स्पष्ट, संक्षिप्त और प्रभावी ढंग से हिंदी में लिख और बोल सकेंगे।	3. विद्यार्थी सांस्कृतिक रूप से संवेदनशील और जिम्मेदार नागरिक बनेंगे जो समाज में सकारात्मक योगदान दे सकेंगे।
पीओ 4/पीएसओ 4/पीईओ 4	4. हिंदी भाषा और साहित्य के अध्ययन के माध्यम से सामाजिक और सांस्कृतिक जागरूकता पैदा करना।	4. विद्यार्थी साहित्य, भाषा, संस्कृति और समाज के बीच के संबंधों को समझने में सक्षम होंगे।	4. विद्यार्थी निरंतर सीखने और स्वतंत्र अध्ययन की आदत विकसित करेंगे।
पीओ 5/पीएसओ 5/पीईओ 5	5. हिंदी भाषा और साहित्य के क्षेत्र में आजीवन सीखने और पेशेवर विकास के लिए प्रेरित करना।	5. विद्यार्थी शिक्षा, अनुसंधान, पत्रकारिता, प्रशासन, अनुवाद आदि जैसे विभिन्न क्षेत्रों में हिंदी भाषा और साहित्य के अपने ज्ञान को लागू करने के लिए तैयार होंगे।	5. विद्यार्थी हिंदी भाषा और साहित्य को बढ़ावा देने और उसे बनाए रखने के लिए प्रतिबद्ध होंगे।

बीए हिंदी साहित्य में सभी पाठ्यक्रमों के पाठ्यक्रम घटकों (सीओ) को कार्यक्रम परिणामों (पीओ), कार्यक्रम विशिष्ट परिणामों (पीएसओ) और कार्यक्रम शैक्षिक उद्देश्यों (पीईओ) से संरेखण

पाठ्यक्रम उद्देश्य (सीओ)	कार्यक्रम के उद्देश्य (पीओ):	कार्यक्रम विशिष्ट परिणाम (पीएसओ):	कार्यक्रम शैक्षिक उद्देश्य (पीईओ):	स्तर
बीए प्रथम वर्ष पेपर I				
1. भाषा और व्याकरण - ग्रंथों में प्रयुक्त भाषा, व्याकरण, शब्द चयन, वाक्य रचना और भाषाई विविधता का अध्ययन।	1, 4	1	1, 4	समझ (मध्यम)
2. साहित्यिक रचनाओं का विश्लेषण - विषय-वस्तु, पात्र, कथा, शैली और अलंकारिकता का विश्लेषण।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
3. भक्ति और आध्यात्मिकता - भक्ति भावना, आध्यात्मिक शिक्षा, धार्मिक विचार, समाज और धर्म, नैतिक शिक्षा का अध्ययन।	1, 4	1	1, 4	समझ (मध्यम)
4. सामाजिक और सांस्कृतिक संदर्भ - सामाजिक मुद्दे, सांस्कृतिक परंपराएं, ऐतिहासिक संदर्भ, मानवीय मूल्य और जीवन दर्शन का अध्ययन।	1, 4	1	1, 4	समझ (मध्यम)
5. तुलनात्मक अध्ययन - अन्य साहित्यिक रचनाओं, भाषाओं, संस्कृतियों, विचारधाराओं और कालखंडों के साथ तुलना।	1, 4	1	1, 4	विश्लेषण (मध्यम)
बीए प्रथम वर्ष पेपर II				
1. उपन्यास का अध्ययन - विषय-वस्तु, पात्र, कथा, शैली और अलंकारिकता का अध्ययन।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
2. कहानी का अध्ययन - विषय-वस्तु, पात्र, कथा, शैली और अलंकारिकता का अध्ययन।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
3. गद्य की विधाओं का अध्ययन - डायरी, संस्मरण, यात्रा, रेखा चित्र का परिचय, भाषा, शैली, विषय-वस्तु और लेखकों का अध्ययन।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
4. हिंदी गद्य का विकास - प्राचीन काल से आधुनिक काल तक विकास का अध्ययन, विभिन्न कालखंडों की विशेषताएं, प्रमुख लेखकों का योगदान, सामाजिक और सांस्कृतिक प्रभाव, भाषा का विकास।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
5. हिंदी उपन्यास और कहानी का स्वरूप और परिभाषा - परिभाषाएं, स्वरूप, तत्व, भेद और उदाहरणों का अध्ययन।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
बीए द्वितीय वर्ष पेपर I				
1. विषय-वस्तु: रीतिकालीन कविता में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
2. भाषा: रीतिकालीन कविता में प्रयुक्त भाषा की विशेषताओं का अध्ययन करें।	1, 4	1	1, 4	समझ (मध्यम)
3. शैली: रीतिकालीन कविता में प्रयुक्त विभिन्न शैलियों का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
4. अलंकार: रीतिकालीन कविता में प्रयुक्त विभिन्न अलंकारों का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
5. प्रमुख कवियों का अध्ययन: रीतिकाल के प्रमुख कवियों और उनकी रचनाओं का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)

बीए द्वितीय वर्ष पेपर II				
1. विषय-वस्तु: नाटक में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
2. पात्र: नाटक में वर्णित विभिन्न पात्रों के चरित्र चित्रण और विकास का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
3. कथा: नाटक में वर्णित कथाओं का सार, संरचना और विकास का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
4. शैली: नाटक में प्रयुक्त विभिन्न शैलियों और उनके प्रभाव का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
5. आलंकारिकता: नाटक में प्रयुक्त विभिन्न अलंकारों और उनके प्रभाव का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
बीए तृतीय वर्ष पेपर I				
1. विषय-वस्तु: आधुनिक काव्य में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
2. भाषा: आधुनिक काव्य में प्रयुक्त भाषा की विशेषताओं का अध्ययन करें।	1, 4	1	1, 4	समझ (मध्यम)
3. शैली: आधुनिक काव्य में प्रयुक्त विभिन्न शैलियों का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
4. अलंकार: आधुनिक काव्य में प्रयुक्त विभिन्न अलंकारों का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
5. प्रमुख कवियों का अध्ययन: आधुनिक काल के प्रमुख कवियों और उनकी रचनाओं का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
बीए तृतीय वर्ष पेपर II				
1. विषय-वस्तु: निबंध में वर्णित विभिन्न विषयों और विचारों का विश्लेषण करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
2. भाषा: निबंध में प्रयुक्त भाषा की विशेषताओं का अध्ययन करें।	1, 4	1	1, 4	समझ (मध्यम)
3. शैली: निबंध में प्रयुक्त विभिन्न शैलियों का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)
4. विचारों का क्रम: निबंध में विचारों को क्रमबद्ध तरीके से प्रस्तुत करने की तकनीक का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	विश्लेषण (मध्यम)
5. प्रमुख निबंधकारों का अध्ययन: आधुनिक हिंदी साहित्य के प्रमुख निबंधकारों और उनकी रचनाओं का अध्ययन करें।	1, 2, 4	1, 2	1, 2, 4	समझ (मध्यम)