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