

M.N.S.GOV.T. COLLEGE, BHIWANI
DEPARTMENT OF BOTANY

LESSON PLAN

SESSION: 2025-26

Name of Teacher: Dr. Sunita

Class & Section: BSc 1st Life Science (Sec A & B)

Paper: Diversity of Microbes, Algae, Fungi and Archegoniates

Month	Week	Topic & Subtopics
August	Week 1	Diversity of Microbes: Bacteria - Discovery - General characteristics - Cell structure
	Week 2	Bacteria: Modes of Reproduction - Vegetative - Asexual - Recombination (conjugation, transformation, transduction)
	Week 3	Economic Importance of Bacteria - Agriculture, Industry, Medicine
	Week 4	Viruses: Discovery & General Characters - Biological status
September	Week 1	Viruses: Structure & Replication - DNA virus (T-phage) - RNA virus (TMV) - Lytic and Lysogenic cycle
	Week 2	Algae: General Characteristics & Classification - Fritsch classification up to class
	Week 3	Algae: Life Histories - Nostoc (Cyanophyceae) - Volvox (Chlorophyceae)
	Week 4	Algae: Life Histories - Vaucheria (Xanthophyceae) - Ectocarpus (Phaeophyceae) - Polysiphonia (Rhodophyceae)
October	Week 1	Economic Importance of Algae Introduction to Fungi: General Characteristics
	Week 2	Fungi: Classification (Ainsworth) Life Cycle - Rhizopus (Zygomycota) - Puccinia (Basidiomycota)
	Week 3	Collectotrichum (Deuteromycotina) - Lichens & Mycorrhiza - Economic Importance of Fungi
	Week 4	Bryophytes: General Characteristics & Classification Alternation of Generation
November	Week 1	Morphology, Anatomy & Reproduction of Marchantia & Funaria
	Week 2	Pteridophytes: General Characteristics & Classification - Smith 1955 classification - Fossils & fossilization (Rhynia)
	Week 3	Pteridophytes: Structure & Reproduction - Selaginella - Pteris - Stellar System, Heterospory, Apogamy & Economic Importance
	Week 4	Revision of Full Syllabus


Teachers Signature

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LESSON PLAN

SESSION: 2025-26

Name of Teacher: Deepika Rani

Class & Section: BSc 2nd Life Science

Paper: Herbal Technology

Month	Week	Topic
August	Week 1	Herbal Medicines: History and Scope - Definition of medical terms - Role of medicinal plants in Siddha systems of medicine
	Week 2	Herbal Medicines: Cultivation and Harvesting - Processing, storage, marketing, and utilization of medicinal plants
	Week 3	Herbal Medicines: Medicinal Plant Banks - Importance and functioning
	Week 4	Phytochemistry: Active Principles - Methods of testing in herbal plants
September	Week 1	Phytochemistry: Identification & Utilization of Medicinal Herbs - Catharanthus roseus (cardiotonic) - Withania somnifera (drugs acting on nervous system)
	Week 2	Phytochemistry: Identification & Utilization of Medicinal Herbs - Clerodendron phlomoides (anti-rheumatic) - Centella asiatica (memory boosters)
	Week 3	Pharmacognosy: Concept & Scope - Systematic position and medicinal uses of Tulsi, Ginger, Turmeric
	Week 4	Pharmacognosy: Medicinal Uses - Fenugreek, Indian Gooseberry, Ashoka - Herbal foods - Future of Pharmacognosy
October	Week 1	Analytical Pharmacognosy: Drug Adulteration - Types of adulteration - Methods of drug evaluation
	Week 2	Analytical Pharmacognosy: Biological Testing - Biological testing of herbal drugs
	Week 3	Analytical Pharmacognosy: Phytochemical Screening Tests - Secondary metabolites: alkaloids, flavonoids, steroids
	Week 4	Holiday
November	Week 1	Analytical Pharmacognosy: Phytochemical Screening Tests (continued) - Tri-terpenoids, phenolic compounds
	Week 2	Revision Part 1 - Herbal Medicines + Phytochemistry
	Week 3	Revision Part 2 - Pharmacognosy + Analytical Pharmacognosy
	Week 4	Full Syllabus Revision / Q&A / Discussion

Deepika
Teachers Signature
(DEEPIKA RANI)

M.N.S.GOV.T. COLLEGE, BHIWANI

DEPARTMENT OF BOTANY

LESSON PLAN

SESSION: 2025-26

Name of Teacher: DEEPIKA RANI

Class & Section: B.Sc.II (Life Science) 3rd Sem.

Paper: Gymnosperms & Plant Anatomy

Month	Week	Topic
August	Week 1	Gymnosperms: General Characters, Classification
	Week 2	Affinities of gymnosperms & Pteridophytes & Angio.
	Week 3	Geological Time Scale & Economic Importance.
	Week 4	Morphology & anatomy of Cycas.
September	Week 1	Reproduction in Cycas & economic importance.
	Week 2	Morphology & Anatomy of Pinus, Class-Test.
	Week 3	Reproduction in Pinus, Simple Tissue, SAM.
	Week 4	Permanent tissue - Xylem, Phloem & Tissue system.
October	Week 1	Secondary Growth, Vascular Cambium - str.
	Week 2	Functions of Vascular cambium, 2 ^o Growth, Wood
	Week 3	Abnormal 2 ^o growth & Types of leaves, Phyllotaxy
	Week 4	DIWALI VACATIONS
	Week 5	Epidermal appendages, Stomatal apparatus, RAM
November	Week 1	Root system & its modification, Monocot Root
	Week 2	Dicot Root, Leaf Abscission & Venation
	Week 3	2 ^o Growth & Revision of syllabus
	Week 4	Revision of complete syllabus.

Signature

(DEEPIKA RANI).

M.N.S.GOV. COLLEGE, BHIWANI
DEPARTMENT OF

SESSION: 2025-26

LESSON PLAN

Name of Teacher: **MAMTA RANI**

Class & Section: **B.Sc. IIIrd (Sec-A)**

Paper: **Genetics & Plant Breeding-I**

Month	Week	Topic
August	Week 1	History, Technologies & Laws of Mendel's.
	Week 2	Gene interaction, cytoplasmic inheritance, shell coiling
	Week 3	Kappa particle in paramecium, multiple allelism
	Week 4	Pleiotropism, chromosomal theory, male sterility.
September	Week 1	Leaf variegation in mirabilis jalapa, Sex determination
	Week 2	Sex determination in monoecious, Genic theory.
	Week 3	Sex determination in dioecious plants, Genic factors.
	Week 4	Factor affecting environmental, chromosomal, Linkage
October	Week 1	Types, History of linkage, Bridges's experiment
	Week 2	coupling & repulsion, recombination frequency
	Week 3	Linkage maps based on two & three factor crosses.
	Week 4	Diwali vacation
	Week 5	Crossing over - concept & significance (Chas Test)
November	Week 1	Cytological proof of crossing over, Mutation
	Week 2	Types of mutation - Physical, chemical, Polyploidy.
	Week 3	chromosomal & numerical changes, Euploidy,
	Week 4	Deletion, duplication, Inversion, Translocation.

Mamta Rani

M.N.S.GOV. COLLEGE, BHIWANI
DEPARTMENT OF

LESSON PLAN

SESSION: 2025-26

Name of Teacher: **MAMTA RANI**

Class & Section: **B.Sc. IIIrd (Sec-A)**

Paper: **Genetics & Plant Breeding - II**

Month	Week	Topic
August	Week 1	Introduction of objectives, Breeding system of Modes
	Week 2	Rep. in crop plants, achievements & undesirable consequences
	Week 3	Centre of origin in crop plants, Acclimatization, Selection in self poll.
	Week 4	Selection method in cross propagated & hybrid plants
September	Week 1	Hybridisation - self Pollinated & cross pollinated
	Week 2	Hybridisation in veg. Propagated, advantage & limitation
	Week 3	Concept & Mechanism of mono genic inheritance
	Week 4	Class Test & Revision of previous topics
October	Week 1	Concept & mechanism of polygenic Inheritance
	Week 2	History & genetic basis of Inbreeding depression
	Week 3	Application & History of Heterosis
	Week 4	Diwali Vacation
	Week 5	Mutation & its role, Polyploidy.
November	Week 1	Polyploidy & Distant Hybridisation.
	Week 2	Biotechnology in crop improvements.
	Week 3	Class Test & Revision.
	Week 4	Revision of Imp. Topics.

Mamta Rani

M.N.S.GOV'T. COLLEGE, BHIWANI
DEPARTMENT OF

LESSON PLAN

SESSION 2025-26

Name of Teacher: Mumta Rani

Class & Section: B.Sc III MDC (Sec-A)

Paper: Ornamental Plants

Month	Week	Topic
August	Week 1	History of garden, popular garden of India
	Week 2	Types of garden, formal
	Week 3	Informal garden, styles of garden
	Week 4	Significance of shrubs, trees, palms
September	Week 1	Significance of cycads, cacti
	Week 2	Significance of succulents, climbers, creepers
	Week 3	Indoor plants, water plants
	Week 4	Bamboo plants & quick revision of both unit
October	Week 1	Flower & seed production
	Week 2	Protected cultivation of ornamentals
	Week 3	Preposition & Scope of floriculture in India.
	Week 4	Diwali Vacation
	Week 5	Principles of veg. propagation
November	Week 1	clone selection, technique in cutting
	Week 2	Budding, grafting & layering.
	Week 3	Propagation by stem & roots.
	Week 4	Revision.

Mumta Rani

DEPARTMENT OF BOTANY

LESSON PLAN (ODD SEM.)

SESSION: 2025-26

Name of Assistant Professor: Dr. ASHA DEVI

Class & Section: B.Sc.III (Medical) Section B

Paper: 20 UN-BOT 501A (Economic botany and Biotechnology I)

Month	Week/ Days	Chapter/ Topic
August	Week 1	origin and centres of agriculture, Plant introduction,
	Week 2	General account of Spices (Clove, Turmeric, Black Pepper - Botanical name, family, part used, morphology, uses)
	Week 3	Coriander, Ferula - Botanical name, family, part used, morphology, uses); Comparative study of spices and condiments; Tea & Coffee (morphology, processing, uses)
	Week 4	Oil Yielding Plants (Groundnut, Mustard - Botanical name, family, part used morphology, cultivation, uses)
September	Week 1	Fibre Yielding Plants (Cotton, Jute - Botanical name, family, part used morphology, cultivation, uses)
	Week 2	RDT: Enzymes useful in molecular cloning (Restriction endonuclease, DNA ligase, polynucleotide kinase)
	Week 3	Enzymes (Klenow enzyme, reverse transcriptase, alkaline phosphatase, DNA polymerase-1); Sources of foreign DNA
	Week 4	Cloning Vectors (Plasmid, Cosmid, Phasmid and Bacteriophage)
October	Week 1	Polymerase Chain Reaction (PCR) and its applications; Brief account of DNA fingerprinting
	Week 2	Gene Transfer Techniques (Physical, Chemical and Biological methods)
	Week 3	Specific examples of Transgenic Plants (Bt. Cotton, FlavrSavr, Golden rice); Review and Wrap-up
	Week 4	Diwali holiday
November	Week 1	Selectable and scorable markers; Applications of recombinant DNA technology (Agriculture, Medicine)
	Week 2	Concept of Transgenic Plants for crop improvement; Resistance to herbicide, insecticides, virus and other disease
	Week 3	Revision
	Week 4	Revision

Asht
Dr ASHA DEVI