

DEPARTMENT OF BOTANY

LESSON PLAN (EVEN SEM.)

SESSION: 2024-25

Name of Assistant Professor: Dr. ASHA DEVI

Class & Section: B.Sc.I (M) Section A & B

Paper: 24 UN-BOT 201 (Cell biology and Genetics)

Month	Week/ Days	Chapter/ Topic
January	Week 5	Cell organelles structure and function: cell membrane, cell wall, chloroplast
February	Week 1	Cell organelles structure and function: mitochondria, endoplasmic reticulum, golgi bodies
	Week 2	Cell organelles structure and function: vacuoles, lysosome, peroxisomes
	Week 3	Cell organelles structure and function: Nucleus, nucleolus, cell division- mitosis and meiosis and its significance.
	Week 4	Chromosome morphology, structure
March	Week 1	Chromosome numerical aberration: deletion, duplication, translocation/ assignments
	Week 2	Holi vacation
	Week 3	Chromosome numerical aberration: inversion, aneuploidy, polyploidy, sex determination in plants
	Week 4	Mendels law: law of segregation, independent assortment. Linkage and crossing over/ mid term exam
April	Week 1	Allelic and non allelic gene interaction, presence and function of mitochondrial DNA, plastid DNA, plasmids
	Week 2	Mutation: spontaneous and induced, physical and chemical
	Week 3	Mutation: transition, transversion, frameshift mutation
	Week 4	Revision

Asha

(Dr. Asha Devi)

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

LESSON PLAN (4th SEM.)


SESSION: 2024-25

Name of Assistant Professor: Dr. Sunita

Class & Section: B.Sc.II (M)

Paper: I (Plant Physiology)

Month	Week	Topic
January	Week 1	Importance of water, water potential and its components;
	Week 2	Imbibition, Diffusion, Osmosis, Absorption of water
	Week 3	Transport of water (Transpiration pull theory), Root pressure and guttation, Transpiration and its significance; Factors affecting transpiration
	Week 4	Revision of Unit-1 & test
	Week 5	Essential macro and microelements and their role, Criteria of essentiality of elements; Role of essentiality of elements; Deficiency symptoms,
February	Week 1	Role of essentiality of elements; Deficiency symptoms, Transport of ions across cell membrane, active and passive transport,
	Week 2	Transport of organic substance: girdling experiment, Pressure flow model, Phloem loading and unloading.
	Week 3	Theories of transport
	Week 4	Photosynthetic Pigments (Chl a, Chl b, xanthophyll, carotene); reaction center, antenna molecules action spectra, enhancement effect,
March	Week 1	Photosystem I and II, Factors affecting Photosynthesis ,Electron transport and mechanism of ATP synthesis, C3, C4 and CAM pathways of carbon fixation, Photorespiration.
	Week 2	Holi Vacations
	Week 3	Revision of Unit-2 & test
	Week 4	Revision of Unit-3 & test
April	Week 1	Aerobic and anaerobic respiration, Glycolysis (EMP), TCA cycle;
	Week 2	Oxidative phosphorylation, Oxidative Pentose Phosphate Pathway,
	Week 3	Respiratory Quotient, ATP as energy currency of cell
	Week 4	Revision of Unit-4 & test
	Week 5	Revision


DR. SUNITA

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

SESSION: 2024-25


LESSON PLAN (4th SEM.)

Name of Assistant Professor: Dr. Sunita

Class & Section: B.Sc.II (M)

Paper: II (Plant Metabolism)

Month	Week	Topic
January	Week 1	Enzymes: Discovery, nomenclature, classification, Structure & properties
	Week 2	Mechanism of enzyme catalysis and enzyme inhibition.
	Week 3	Lipid Classification, saturated & unsaturated fatty acid,
	Week 4	lipid biosynthesis, beta oxidation of lipids, Glyoxylate cycle
	Week 5	Biological nitrogen fixation
February	Week 1	Nitrate & ammonium Assimilation
	Week 2	Revision of Unit-1 enzymes & class test
	Week 3	Revision of Unit- 2 Lipid metabolism & oral test of students
	Week 4	Discovery, physiological role and mechanism of action of Auxin
March	Week 1	Discovery, physiological role and mechanism of action of cytokinin
	Week 2	Holi vacations
	Week 3	Discovery, physiological role and mechanism of action of gibberellins
	Week 4	Discovery, physiological role and mechanism of action of ABA
April	Week 1	Discovery, physiological role and mechanism of action of ethylene
	Week 2	Revision of Unit-3 & class test
	Week 3	Growth & development, photoperiodism, Fruit ripening, physiology of flowering
	Week 4	Phytochrome, photo morphogenesis, vernalization & physiology of senescence
	Week 5	Revision



DR. SUNITA

DEPARTMENT OF BOTANY

LESSON PLAN (EVEN SEM.)

SESSION: 2024-25

Name of Assistant Professor: Dr. ASHA DEVI

Class & Section: B.Sc.II (M) Section A

Paper: 20 SEC-B 404 (Nursery and Gardening)

Month	Week/ Days	Chapter/ Topic
January	Week 1	nursery: definition, objective and scope
	Week 2	nursery: infrastructure, planning and seasonal activities
	Week 3	planting: direct seedling and transplant
	Week 4	seed storage: seed bank, factors affecting seed viability, genetic erosion
	Week 5	Nursery: vegetative propagation- air layering
February	Week 1	Nursery: cutting, selection of cutting, collecting season, treatments of cutting, root mediums, planting of cutting
	Week 2	Nursery: hardening of plants- green house, mist chamber, shade root, shade house and glass house
	Week 3	Gardening: definition, objective and scope, different types of gardening landscape and home gardening- parks and its components
	Week 4	Gardening: plant materials, design computer application in landscape/ Assignments
March	Week 1	gardening operation: soil laying, manuring, watering, management of pests and diseases and harvesting
	Week 2	Holi vacation
	Week 3	class test/, sowing and raising of seeds and seedling
	Week 4	transplantation of seedling,
April	Week 1	cultivation: cabbage, bringal. Lady's finger
	Week 2	cultivation: onion, garlic, tomato
	Week 3	cultivation: carrot, storage and marketing procedures
	Week 4	revision/ class test

Asha
(Dr. Asha Devi)

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

DEPARTMENT OF Botany

LESSON PLAN 6th Sem

SESSION: 2024-25

Name of Teacher: MANTA RANI

Class & Section: B.Sc. 3rd (Sec-B)

Paper: Environmental Biology-I

Month	Week	Topic
January	Week 1	Components of Ecology
	Week 2	Scope, importance & application of Ecology
	Week 3	Ecosystem - Types, structure.
	Week 4	• Food chain, food web, Ecological Pyramids.
	Week 5	Biogeochemical cycles C, N, P, S pathways & processing.
February	Week 1	Mineral cycle P, S pathways & processing.
	Week 2	Biodiversity & its conservation
	Week 3	Value, Threat & conservation.
	Week 4	Hotspots of Biodiversity & endemic species
March	Week 1	Natural Disasters - Flood, drought, Earthquake
	Week 2	Holi Vacation
	Week 3	Volcano, Tsunami, cyclones.
	Week 4	Ecology management, sustainable development
April	Week 1	wild life management, joint forest development
	Week 2	• Forest management, desertification.
	Week 3	Desertification, land reclamation, wetland
	Week 4	wetland & its management, class Test
	Week 5	Revision

Manta

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

LESSON PLAN 6th Sem

SESSION: 2024-25

Name of Teacher: NAMTA RANI

Class & Section: B.Sc. 3rd (Sec-B)

Paper: Environmental Biology - II

Month	Week	Topic
January	Week 1	Types of Pollution, Air, water
	Week 2	Soil & solid waste pollution, sources & parameters
	Week 3	Pollution effects, residual toxicity, fertilizers
	Week 4	Pesticides, insecticides, Greenhouse effects
	Week 5	Global warming, ozone layer, acid rain
February	Week 1	Human population growth & environment
	Week 2	Urbanisation & related problems, Industrialization
	Week 3	Effects of modern agriculture, remote sensing
	Week 4	GIS, Bio remediation
March	Week 1	Bio remediation - in situ, Ex-situ,
	Week 2	Holi vacation
	Week 3	Bioremediation of toxic metals, Biological monitoring
	Week 4	Bio indicator, class Test
April	Week 1	Control of environmental pollution, xenobiotics
	Week 2	Vermi composting, Biomining of Cu & Au etc.
	Week 3	Concept of phytoremediation.
	Week 4	Revision
	Week 5	Revision

Namta

"(EVEN SEM.)

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

SESSION: 2024-25

LESSON PLAN : 6th Sem.

Name of Teacher: DEEPIKA RANI

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

Paper: Cell & Molecular Biology - I (Paper I)

Month	Week	Topic
January	Week 1	Cell Theory, Prokaryotic & Eukaryotic Cells
	Week 2	Cell cycle, Mitosis & Meiosis, C&K's.
	Week 3	Molecular Controls, Cell organelles - Mitochondria
	Week 4	Chloroplast & Endoplasmic Reticulum
	Week 5	Golgi Bodies & Lysosomes.
February	Week 1	Vacuoles, Class-Test.
	Week 2	Peroxisomes & Glyoxisomes - Str. & Functions.
	Week 3	Str. & Composition of Nucleus, Nuclear Pore Complex.
	Week 4	Euchromatin & Heterochromatin & Ribosomes.
March	Week 1	Chromosome structure & Karyotype, Assignments.
	Week 2	HOLI VACATIONS
	Week 3	Special type of chromosomes, DNA packaging model.
	Week 4	Cell Membrane str. - Unit membrane, Sandwich model.
April	Week 1	Fluid Mosaic Model, Memb. Proteins, Class-Test.
	Week 2	Membrane Permeability & Functions. Cell-wall Structure
	Week 3	Cell wall - Functions, Gap junctions & Plasmodesmata
	Week 4	Revision
	Week 5	Revision.

Define :

(DEEPIKA RANI)

Assistant Professor.

(BOTANY)

"(EVEN SEM.)

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

DEPARTMENT OF Botany

LESSON PLAN : 6th Sem.

SESSION: 2024-25

Name of Teacher: **DEEPIKA RANI**

Class & Section: **B.Sc. III (M) Section-A**

Paper: **Cell & Molecular Biology -II (Paper II)**

Month	Week	Topic
January	Week 1	DNA str. - Watson & Crick model, historic perspective.
	Week 2	Griffith's & Avery's transformation experiments,
	Week 3	Hershey-Chase Bacteriophage experiment.
	Week 4	Types of Genetic Material, Functions of DNA.
	Week 5	Different types of DNA.
February	Week 1	Replication in Prokaryotes, bidirectional replication
	Week 2	Class-Test, DNA-replication in Eukaryotes.
	Week 3	Replication enzymes, Theta mode of replication.
	Week 4	Semi-conservative RNA priming, linear & ds-DNA.
March	Week 1	DNA-repair Mechanisms, class-Assignments.
	Week 2	HOLI VACATIONS
	Week 3	Types & structure of RNA - mRNA, tRNA, rRNA.
	Week 4	Mode of Transcription in Prokaryotes & Eukaryotes.
April	Week 1	RNA pol. types & Genetic Code. Class-Test.
	Week 2	Translation, Post Translational Modifications.
	Week 3	Lac operon, Tryptophan Operon & Gene regulation.
	Week 4	Revision.
	Week 5	Revision.

Dutline.

(DEEPIKA RANI)
Assistant Professor
(BOTANY)