

LESSON PLAN
Session: 2024-25 (ODD SEM)

Name of Teacher- Dr. ANIL KUMAR

Class- M.Sc. Botany

Subject- Microbial Diversity

| WEEKS | SYLLABUS |
|---------|--|
| Week 1 | Introduction and scope of microbiology, isolation and sampling techniques for microorganisms, microbial culture media, different sterilization techniques, principles, protocols and applications of staining techniques |
| Week 2 | measurement of microbial growth, determination of microbial growth curve, continuous and synchronous culture, safety measures in handling microbiological samples and microorganisms. |
| Week 3 | Discovery of viruses and development of Virology, nomenclature and classification of viruses, physical and biochemical characteristics of viruses, isolation and purification techniques |
| Week 4 | replication and transmission of viruses, economic importance of viruses, new emerging viruses and zoonotic diseases, |
| Week 5 | characteristics of sub-viral agents- Viroids and Prions, Cultivation and assay of viruses |
| Week 6 | Occurrence, classification, nutrition and reproduction shape and ultrastructure of bacterial cell, |
| Week 7 | regulation of gene expression in prokaryotes, economic importance of bacteria |
| Week 8 | salient features and biological significance of methanogens, cyanobacteria, phytoplasm, |
| Week 9 | nitrogen fixing and phosphate solubilizing, photosynthetic, bioluminescent and phytopathogenic bacteria. |
| Week 10 | General characters and classification of fungi, modes nutrition and reproduction, economic importance of fungi |
| Week 11 | salient features of Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina and Deuteromycotina |
| Week 12 | General account of heterokaryosis, heterothallism, parasexuality, sex hormones, mycorrhiza; |

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| Week 13 | Lichens: structure, reproduction and economic importance. |
| Week 14 | Revision |
| Week 15 | Class test and assignments |
| Week 16 | Revision |

Session: 2024-25 (ODD SEM)

Name of Teacher- Dr.Anil Kumar

Class- M.Sc. Botany

Subject- Cryptogamic Botany

| WEEKS | SYLLABUS |
|---------|--|
| Week 1 | Phycology: Algae in diversified habitats (terrestrial, freshwater, marine); thallus organization; cell ultrastructure; reproduction (vegetative, asexual, and sexual). |
| Week 2 | Classification of algae; criteria for classification; pigments, reserve food and flagella. |
| Week 3 | Salient features of Protochlorophyta, Chlorophyta, Charophyta, Xanthophyta. |
| Week 4 | Salient features of Bacillariophyta, Phaeophyta and Rhodophyta. |
| Week 5 | Algal blooms; algal biofertilizers; Economic importance of algae as food, feed, medicine, and industry. |
| Week 6 | Bryophyta: Morphology, structure, reproduction and life history; distribution; economic and ecological importance. |
| Week 7 | Classification of bryophytes; general account of Marchantiales, Jungermaniales, Anthoceratales, |
| Week 8 | Classification of bryophytes; general account of Sphagnales, Funariales and Polytrichales. |
| Week 9 | Pteridophyta: General characteristics, morphology, anatomy, reproduction |
| Week 10 | classification of Pteridophytes. |
| Week 11 | Evolution of stele and stelar system; hetrospory and origin of seed habit; |
| Week 12 | general account of fossil Pteridophyta; |

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| Week 13 | Introduction to Psilopsida, Lycopsida |
| Week 14 | Introduction to Sphenopsida and Pteropsida. |
| Week 15 | Class test and assignments |
| Week 16 | Revision |

LESSON PLAN

Session: 2024-25 (ODD SEM)

Name of Teacher- Dr. SURENDER KUMAR

Class- M.Sc. Botany

Subject- Plant Tissue Culture and Resource Utilization

| WEEKS | SYLLABUS |
|--------|--|
| Week 1 | Plant Tissue Culture: Introduction, History, Scope and basic concepts |
| Week 2 | Laboratory organization; Types of media and its preparation; Sterilization techniques; |
| Week 3 | Concept of cellular differentiation and totipotency; Types of culture, callus/ suspension culture. |
| Week 4 | Induction and maintenance of callus and suspension cultures. |
| Week 5 | Fundamental aspects of Morphogenesis and Haploid production: Study of differentiation through Organogenesis and Embryogenesis, |
| Week 6 | Somatic embryogenesis and its utility, Zygotic vs. Somatic embryogenesis, Micropropagation, Encapsulation of somatic embryo & shoot tip for artificial seed production and its applications, |
| Week 7 | Haploid production: Definition, Androgenesis, Gynogenesis, Culture techniques, and induction factors, Biotechnological utilization of haploids. |
| Week 8 | Somatic hybridization and variations: Protoplast isolation, fusion, culture, hybrid selection, and |

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| | regeneration possibilities with special reference to crop plants, |
| Week 9 | Applications and limitations of protoplast research, Selection mechanism for hybrids and cybrid |
| Week 10 | Somaclonal & gametoclonal variations and isolations of useful mutants. |
| Week 11 | Cryopreservation, Storage, and Importance: Cryopreservation and germplasm storage. Plant secondary metabolites; sources and production of secondary metabolites/natural products through tissue culture, their selections and elicitation; |
| Week 12 | Biochemical pathways for producing secondary metabolites; |
| Week 13 | Applications of plant tissue culture in Forestry, Ornamental plants, disease-free plants, and agriculture. |
| Week 14 | revision |
| Week 15 | Class test and assignments |
| Week 16 | Revision |

Name of Teacher- Surender Kumar

Class–M.Sc. 1st sem

Subject- Mushroom Culture Technology

| Weeks | Syllabus |
|--------------|--|
| Week1 | Mushrooms Introduction: History and Scope of Mushroom Cultivation, Taxonomical Position, Vegetative Characteristics, |
| Week2 | Differentiation of edible and poisonous mushrooms. Common Edible mushrooms:. |
| Week3 | Button mushroom (<i>Agaricus bisporus</i>), Milky mushroom (<i>Calocybe indica</i>) |
| Week4 | Oyster mushroom (<i>Pleurotus sajorcaju</i>) and Paddy straw mushroom (<i>Volvariella volvcea</i>) |

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| Week5 | Natural Habitats- Humicolous, Lignicolous, and Coprophilous. Natural growth aspects and climatic requirements for each type of edible mushroom, |
| Week6 | Principles of mushroom cultivation, Structure and construction of mushroom house. |
| Week7 | Identification of appropriate mushrooms for commercial cultivation, nutritional and antinutritional properties, |
| Week8 | medicinal values, therapeutic aspects, and antitumor effect of mushroom |
| Week9 | Methods used for commercial cultivation include mushroom substrate selection, substrate soaking, pasteurization, etc. |
| Week 10 | Role and method of compost preparation, Sterilization procedures. |
| Week 11 | Preparation of value-added products, preparation of spawn substrate, process of spawn culture, |
| Week 12 | selection of correct spawn, culture maintenance, mother spawn production, and storage of spawn. |
| Week13 | Composting technology, mushroom bed preparation. Spawning, spawn running, harvesting. |
| Week 14 | Cultivation of oyster and paddy straw mushroom. Problems in cultivation - diseases, pests and nematodes, weed molds, and their management strategies. |
| Week 15 | Market opportunities; market liabilities; exploring local and national markets |
| Week 16 | ; foreign trade policy; logbooks/related documents for audit |

Session: 2024-25 (Odd Semester)

Name of Teacher- Dr Ritu Nandal

Class–M.Sc. 1st sem

Subject- Plant Anatomy and Gymnosperms

| Weeks | Syllabus |
|--------------|---|
| Week1 | Plant tissue system, Tissue types and functions, Meristem, Their classification and functions |
| Week2 | Organisation of root and shoot apices, Structures of xylem and phloem |
| Week3 | Anatomy of dicot and monocot stem, root, leaves and wood. Transition from root to stem . |

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| Week4 | Primary and secondary growth, anomalous structure and abnormal secondary growth in stems. Application of anatomy in systematic, archaeology and climate change studies. |
| Week5 | Introduction to Gymnosperms, general characters , life cycle |
| Week6 | Diversity , origin and classification of gymnosperms. Evolution of Gymnosperms. |
| Week7 | Affinities and evolutionary relationships with Angiosperms and Archegonaites. Distribution of gymnosperms in India. |
| Week8 | Economic and ecological importance of gymnosperms. Wood characteristic in relation to gymnosperms. |
| Week9 | Paleobotany: fossils, types of rocks, types of fossils and fossilization. |
| Week 10 | Techniques for the study of fossils. Notable paleobotanists of India. |
| Week 11 | General account of the few fossil gymnosperm families (Lyginopteridaceae, Medullosaceae, Glossopteridaceae and Caytoniaceae) and |
| Week 12 | orders (Cycadeoidales, Pentoxylales and Cordaitales). |
| Week13 | Comparative account of the morphology, anatomy and reproduction in the following orders: Cycadales |
| Week 14 | Comparative account of the morphology, anatomy and reproduction in the following orders: Coniferales |
| Week 15 | Comparative account of the morphology, anatomy and reproduction in the following orders: Ginkgoales, , Ephederales |
| Week 16 | Comparative account of the morphology, anatomy and reproduction in the following orders: Welwitschiales and Gnetales. |

LESSON PLAN
Session: 2024-25

Name of teacher- Dr Ritu Nandal

Class- B. Sc 2

Subject- Plant Anatomy

| CLASS | WEEKS | SYLLABUS |
|-------|------------------------|---|
| | 22-7-2024 to 27-7-2024 | Introduction to tissue system, simple and complex |
| | 29-8-2024 to 3-8-2024 | Xylem and Phloem |
| | 5-8-2024 to 10-8-2024 | Epidermal tissue system, Vascular tissue system |
| | 12-8-2024 to 17-8-2024 | Ground tissue system, Root system |
| | 20-8-2024 to 24-8-2024 | Shoot system. Secondary growth in stem |

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| 27-8-2024 to 31-8-2024 | Anamolous secondary growth |
| 2-9-2024 to 7-9-2024 | The Leaf, leaf abscission |
| 9-9-2024 to 14-9-2024 | Stomata type and it's function |
| 16-9-2024 to 21-9-2024 | Phyllotaxy |
| 23-9-2024 to 28-9-2024 | Leaf anatomy of xerophytes |
| 30-9-2024 to 5-10-2024 | Venation pattern |
| 7-10-2024 to 12-10-2024 | Wood and it's types |
| 14-10-2024 to 19-10-2024 | Secondary growth in storage roots |
| 21-10-2024 to 26-10-2024 | Meristematic tissue and it's types |
| 4-11-2024 to 9-11-2024 | Revision and assignment |
| 11-11-2024 to 20-11-2024 | Class tests |
| 23-11-2024 to 20-12-2024 | MDU examination |
| 21-12-2024 to 31-12-2024 | Winter break |

Name of Teacher- Dr.Naveeta
Class-B.Sc. Lifescience 1st Sem.
Subject- Diversity of Microbes

| WEEKS | SYLLABUS |
|--------|--|
| Week 1 | Viruses: Discovery, physiochemical and biological characteristics; classification (Baltimore) |
| Week 2 | General structure with special reference to viroids and prions; replication (general account), DNA virus (T-phage), lytic and lysogenic cycle; RNA virus (TMV). |
| Week 3 | Bacteria: Discovery, general characteristics; Types- archaebacteria, eubacteria, wall-less forms (mycoplasma and spheroplasts); Cell structure; Nutritional types; |
| Week 4 | Reproduction-vegetative, asexual and recombination (conjugation, transformation and transduction). Economic importance of bacteria with reference to their role in agriculture and industry (fermentation and medicine). |
| Week 5 | Cyanobacteria: General characters; thallus organization; cell structure; heterocyst and akinete development; reproduction; Life-cycle of Nostoc. Economic Importance of Cyanobacteria. |

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| Week 6 | Algae: General characteristics; Algae in diversified habitats (terrestrial, freshwater, marine); thallus organization; cell ultrastructure; reproduction (vegetative, asexual and sexual); Algal classification criteria- pigments, reserve food and flagella; Classification upto classes (Smith, 1955); algal blooms and red tides; algal biofertilizers. |
| Week 7 | Morphology and life-cycle of Volvox, Oedogonium (Chlorophyceae), |
| Week 8 | Morphology and life-cycle of Vaucheria (Xanthophyceae) |
| Week 9 | Ectocarpus(Phaeophyceae) and Polysiphonia (Rhodophyceae) Economic importance of algae |
| Week 10 | Fungi: General characteristics; organization of thallus; nutrition and reproduction; Classification upto classes (Ainsworth, 1966); Morphology and life-cycles of Phytophthora (Mastigomycotina), Mucor |
| Week 11 | (Zygomycotina), Penicillium (Ascomycotina), Puccinia, Agaricus (Basidiomycotina), Colletotrichum (Deuteromycotina); Economic importance of fungi |
| Week 12 | Lichens: Classification, morphology, internal structure, reproduction and Economic importance |
| Week 13 | Mycorrhiza: Ectomycorrhiza and endomycorrhiza and their significance |
| Week 14 | Assignments Revision |
| Week 15 | Class test Revision |
| Week 16 | Revision |

Name of Teacher- Pooja

Class –B.Sc. 2nd Year Section-B

Subject- Biology and Diversity of Seed Plants -I

| Weeks | Syllabus |
|--------------|---|
| Week1 | General characters, origin and evolution of gymnosperms |
| Week2 | Geological time table |
| Week3 | Evolution of seed habit |
| Week4 | Pilger and melchior's (1954) system of classification of gymnosperms |
| Week5 | Palaeobotany- fossils and fossilization (process involved, types of fossils and importance of fossils); |
| Week6 | Reconstruction of the following fossil plants: lyginopteris |
| Week7 | Reconstruction of the following fossil plants: williamsonia |

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| Week8 | Reconstruction of the following fossil plants: cycadeoidea (= bennettites) |
| Week9 | Morphology and anatomy of root, stem |
| Week 10 | Morphology and anatomy of leaf/leaflet and reproductive parts including mode of reproduction, |
| Week 11 | Life-cycle and economic importance of following plants: <i>Cycas</i> |
| Week 12 | Life-cycle and economic importance of following plants: <i>Pinus</i> |
| Week13 | Morphology and anatomy of root, stem, leaf/leaflet and reproductive parts including mode of reproduction |
| Week 14 | Life-cycle and economic importance of <i>Ephedra</i> |
| Week 15 | Economic importance of gymnosperms |
| Week 16 | General characters, origin and evolution of angiosperms |

Name of Teacher- Pawan Sindhu

Class–B.Sc. 2nd Year Section-A

Subject- Biology and Diversity of Seed Plants -I

| Weeks | Syllabus |
|--------------|--|
| Week1 | General characters, origin and evolution of gymnosperms |
| Week2 | Geological time table |
| Week3 | Evolution of seed habit |
| Week4 | Pilger and melchior's (1954) system of classification of gymnosperms |
| Week5 | Palaeobotany- fossils and fossilization (process involved, types of fossils and importance of fossils); |
| Week6 | Reconstruction of the following fossil plants: lyginopteris |
| Week7 | Reconstruction of the following fossil plants: williamsonia |
| Week8 | Reconstruction of the following fossil plants: cycadeoidea (= bennettites) |
| Week9 | Morphology and anatomy of root, stem |
| Week 10 | Morphology and anatomy of leaf/leaflet and reproductive parts including mode of reproduction, |
| Week 11 | Life-cycle and economic importance of following plants: <i>Cycas</i> |
| Week 12 | Life-cycle and economic importance of following plants: <i>Pinus</i> |
| Week13 | Morphology and anatomy of root, stem, leaf/leaflet and reproductive parts including mode of reproduction |

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| Week 14 | Life-cycle and economic importance of <i>Ephedra</i> |
| Week 15 | Economic importance of gymnosperms |
| Week 16 | General characters, origin and evolution of angiosperms |

Name of Teacher- Dr. Pawan

Class –B.Sc. Chem.Hons 3rd Semester

Subject- Plant Anatomy, Reproduction and Biotechnology

| Weeks | |
|---------|--|
| Week1 | Classification and structure of tissue, organisation of roots and shoot apex |
| Week2 | Basic structure of Dicot and monocot leaf, Secondary growth in roots and stems |
| Week3 | Anatomical adaptation of Hydrophytes and Xerophytes, Anomalous secondary growth in <i>Boerhaavia</i> , |
| Week4 | Anomalous secondary growth in <i>Tecoma</i> and <i>Dracaena</i> , Application of anatomy in systematics, forensics and pharmacognosy |
| Week5 | Plant reproduction: structure of male and female gametophytes |
| Week6 | Microsporogenesis and Megasporogenesis, pollination and fertilization |
| Week7 | Polan pistil interaction, Self incompatibility and methods to overcome self incompatibility |
| Week8 | Endosperms types and function, Embryogenesis and polyembryony |
| Week9 | Plant tissue culture; Historical prospective, composition of media, totipotency |
| Week 10 | Physiochemical condition for propagation of plant cells and tissues |
| Week 11 | Somatic embryogenesis, Protoplast isolation culture and fusion, Cybrids |
| Week 12 | Micropropagation, methods and significance of haploid culture |
| Week13 | Plant genetic engineering: brief concept of different gene transfer method special emphasis on <i>Agrobacterium</i> mediated gene transfer |
| Week 14 | Role of plant biotechnology in crop improvement and genetically modified food |
| Week 15 | Application of plant biotechnology for production quality oil |
| Week 16 | Application of plant biotechnology for industrial enzymes and edible vaccine |

Name: Dr.Ritu Hooda

Class: B.Sc. 5th Sem.

Paper- Ecology

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| Week 1 | Introduction to Ecology: Definition; scope and importance; levels of organization |
| | SUNDAY |
| Week 2 | Environment: Introduction; environmental factors- climatic (water, humidity, wind, light, temperature) |
| | SUNDAY |
| Week 3 | edaphic (soil profile, physico-chemical properties), topographic and biotic factors (species interaction). |
| | SUNDAY |
| Week 4 | Adaptations of plants to water stress and salinity (morphological and anatomical features of hydrophytes, xerophytes and halophytes). |
| | SUNDAY |
| Week | Population ecology: Basic concept; characteristics; biotic potential, growth curves; ecotypes and ecads. |
| | SUNDAY |
| Week 6 | Community ecology: Concepts; characteristics (qualitative and quantitative analytical and synthetic); methods of analysis; ecological succession. |
| | SUNDAY |
| Week 7 | Ecosystem: Structure (components) and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow) |
| | SUNDAY |
| Week 8 | Biogeochemical cycles: Carbon, nitrogen, phosphorus and hydrological cycle. |
| | SUNDAY |
| Week 9 | Phyto-geography: Phyto- geographical regions of India; vegetation types of India (forests). |
| | SUNDAY |
| Week 10 | Environmental pollution: Sources, types and control of air and water pollution. |

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| Week 11 | Global change: Greenhouse effect and greenhouse gases; impacts of global warming; carbon trading; Ozone layer depletion; Biomagnification |
| | SUNDAY |
| Week 12 | Revision, Assignment, Test |
| | SUNDAY |
| Week 13 | Revision, Assignment, Test |
| | SUNDAY |

Name of Teacher- Dr Ritu Hooda

Class –B.Sc. 1st Semester (Minor Subject)

Subject- Fundamental of Plant Ecology

| Weeks | Syllabus |
|--------------|---|
| Week1 | Definition; scope and importance; levels of organization |
| Week2 | Environment: Introduction; environmental factors- climatic (water, humidity, wind) |
| Week3 | Environment: environmental factors- climatic (light, temperature), edaphic (soil profile, physico-chemical properties) |
| Week4 | topographic and biotic factors (species interaction) |
| Week5 | Adaptations of plants to water stress and salinity |
| Week6 | Morphological and anatomical features of hydrophytes, xerophytes and halophytes) |
| Week7 | Population ecology: Basic concept; characteristics; biotic potential |
| Week8 | Growth curves; ecotypes and ecads |
| Week9 | Community ecology: Concepts; characteristics (qualitative and quantitative -analytical and synthetic) |
| Week 10 | Methods of analysis; ecological succession. |
| Week 11 | Ecosystem: Structure (components) and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow) |
| Week 12 | Biogeochemical cycles: Carbon, nitrogen, phosphorus and hydrological cycle |

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| Week13 | Phyto-geography: Phyto-geographical regions of India; vegetation types of India |
| Week 14 | Environmental pollution: Sources, types and control of air and water pollution |
| Week 15 | Global change: Greenhouse effect and greenhouse gases; impacts of global warming |
| Week 16 | Carbon trading; Ozone layer depletion; Biomagnification |

Name of Teacher- Dr. Reena

Class –B.Sc. 1st Semester Section-A,B(SEC)

Subject- Biofertilizers and Biopesticides

| Weeks | Syllabus |
|--------------|--|
| Week1 | History of gardening; Importance and scope of floriculture and landscape gardening. |
| Week2 | Nursery Management and Routine Garden Operations: Sexual and vegetative methods of propagation |
| Week3 | Soil sterilization; Seed sowing; Pricking; Planting and transplanting; Shading;Stopping or pinching |
| Week4 | Defoliation; Wintering; Mulching; Topiary; Role of plant growth regulators |
| Week5 | Ornamental Plants: Flowering annuals (Petunia, Chrysanthemum); perennials (Rose, China Rose) |
| Week6 | Divine vines (Money plant, Monstera); Shade and ornamental trees |
| Week7 | Ornamental bulbous and foliage plants; Cacti and succulents; Palms and Cycads |
| Week8 | Ferns and Selaginellas; Cultivation of plants in pots; Indoor gardening; Bonsai |
| Week9 | Principles of Garden Design and landscaping ideas |
| Week 10 | Features of a garden (Garden wall, Fencing, Steps, Hedge, Edging, Lawn, Flower beds, Shrubbery, Borders, Water garden |
| Week 11 | Features of a garden (Garden wall, Fencing, Steps, Hedge, Edging, Lawn, Flower beds, Shrubbery, Borders, Water garden |
| Week 12 | Features of a garden (Garden wall, Fencing, Steps, Hedge, Edging, Lawn, Flower beds, Shrubbery, Borders, Water garden. |
| Week13 | Commercial Floriculture: Factors affecting flower production |
| Week 14 | Production and packaging of cut flowers; Flower arrangements; Methods to prolong vase life |
| Week 15 | Cultivation of Important cut flowers (Carnation, Aster, Chrysanthemum, Dahlia, Gerbera, Gladiolous, Marigold, Rose, Liliun, Orchids) |
| Week 16 | Cultivation of Important cut flowers (Carnation, Aster, Chrysanthemum, Dahlia, Gerbera, Gladiolous, Marigold, Rose, Liliun, Orchids) |

Name: Dr.Monika

Class: B.Sc. 5th Sem.

Paper- Ecology

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| Week 1 | Introduction to Ecology: Definition; scope and importance; levels of organization |
| | SUNDAY |
| Week 2 | Environment: Introduction; environmental factors- climatic (water, humidity, wind, light, temperature) |
| | SUNDAY |
| Week 3 | edaphic (soil profile, physico-chemical properties), topographic and biotic factors (species interaction). |
| | SUNDAY |
| Week 4 | Adaptations of plants to water stress and salinity (morphological and anatomical features of hydrophytes, xerophytes and halophytes). |
| | SUNDAY |
| Week | Population ecology: Basic concept; characteristics; biotic potential, growth curves; ecotypes and ecads. |
| | SUNDAY |
| Week 6 | Community ecology: Concepts; characteristics (qualitative and quantitative analytical and synthetic); methods of analysis; ecological succession. |
| | SUNDAY |
| Week 7 | Ecosystem: Structure (components) and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow) |
| | SUNDAY |
| Week 8 | Biogeochemical cycles: Carbon, nitrogen, phosphorus and hydrological cycle. |
| | SUNDAY |
| Week 9 | Phyto-geography: Phyto- geographical regions of India; vegetation types of India (forests). |
| | SUNDAY |
| Week 10 | Environmental pollution: Sources, types and control of air and water pollution. |

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| Week 11 | Global change: Greenhouse effect and greenhouse gases; impacts of global warming; carbon trading; Ozone layer depletion; Biomagnification |
| | SUNDAY |
| Week 12 | Revision, Assignment, Test |
| | SUNDAY |
| Week 13 | Revision, Assignment, Test |
| | SUNDAY |

Name of Teacher- Dr Surender Singh

Class–B.Sc. 5th semester, Section-A and B

Subject- Plant Physiology

| Weeks | Syllabus |
|--------------|---|
| Week1 | Plant-water relations: Importance of water to plant life; Different physical and Chemical properties of water |
| Week2 | Imbibition, diffusion and osmosis; absorption and transport of water; transpiration; physiology of stomata |
| Week3 | Mineral nutrition: Essential macro and micro elements and their role; |
| Week4 | Mineral uptake; deficiency symptoms. |
| Week5 | Transport of organic substances: Mechanism of phloem transport; source-sink relationship; factors affecting translocation |
| Week6 | Photosynthesis : significance; historical aspects; photosynthetic pigments |
| Week7 | Action spectra and enhancement effects; concept of two photosystems |
| Week8 | Z-scheme; photo- phosphorylation; Calvin cycle; C4 pathway; CAM plants; photorespiration |
| Week9 | Growth and development : Definitions; phases of growth and development |
| Week 10 | Seed dormancy; plant movements; the concept of photoperiodism; |
| Week 11 | Physiology of flowering; florigen concept |
| Week 12 | Physiology of senescence; fruit ripening; |
| Week13 | Plant hormones- auxins, gibberellins, cytokinins, history of their discovery mechanism of action |
| Week 14 | Abscissic acid and ethylene, history of their discovery, mechanism of action |

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| Week 15 | Photo-morphogenesis Concept, Role of different photoreceptors in photomorphogenesis |
| Week 16 | Phytochromes and their discovery, physiological role and mechanism of action. |

Name of teacher- Dr Seema

Class- B. Sc 2

Subject- Plant Anatomy

| CLASS | WEEKS | SYLLABUS |
|-------|--------------------------|---|
| | 22-7-2024 to 27-7-2024 | Introduction to tissue system, simple and complex |
| | 29-8-2024 to 3-8-2024 | Xylem and Phloem |
| | 5-8-2024 to 10-8-2024 | Epidermal tissue system, Vascular tissue system |
| | 12-8-2024 to 17-8-2024 | Ground tissue system, Root system |
| | 20-8-2024 to 24-8-2024 | Shoot system. Secondary growth in stem |
| | 27-8-2024 to 31-8-2024 | Anomalous secondary growth |
| | 2-9-2024 to 7-9-2024 | The Leaf, leaf abscission |
| | 9-9-2024 to 14-9-2024 | Stomata type and its function |
| | 16-9-2024 to 21-9-2024 | Phyllotaxy |
| | 23-9-2024 to 28-9-2024 | Leaf anatomy of xerophytes |
| | 30-9-2024 to 5-10-2024 | Venation pattern |
| | 7-10-2024 to 12-10-2024 | Wood and its types |
| | 14-10-2024 to 19-10-2024 | Secondary growth in storage roots |
| | 21-10-2024 to 26-10-2024 | Meristematic tissue and its types |
| | 4-11-2024 to 9-11-2024 | Revision and assignment |
| | 11-11-2024 to 20-11-2024 | Class tests |
| | 23-11-2024 to 20-12-2024 | MDU examination |
| | 21-12-2024 to 31-12-2024 | Winter break |