

LESSON PLAN (Session 23-24)

Semester -Odd

Department: Botany

Class : B.Sc. Ist

Name of the faculty: Mrs. Deepika Sharma & Dr. Mandeep Kaur

Paper code: B23-BOT-101

Nomenclature of the paper: Diversity of Microbes, Algae, Fungi and Archegoniates

Month	Week	Topics to be covered
July	21.07.23-22.07.23	Introduction about Microbes, Algae, Fungi and Archegoniates
	24.07.23-31.07.23	Bacteria: Structure, nutrition, reproduction and economic importance.
August	01.08.23-05.08.23	Viruses: General account of Viruse including structure of TMV and Bacteriophages.
	07.08.23-12.08.23	Algae: General characters, Introductory classification; economic importance
	14.08.23-19.08.23	life cycle (excluding development) of Nostoc (Cyanophyceae). Volvox, (Chlorophyceae), Vaucheria (Xanthophyceae),
	21.08.23-26.08.23	Ectocarpus (Phaeophyceae) and Polysiphonia (Rhodophyceae).
	28.08.23-30.09.23	Fungi: General characters, Introductory classification; economic importance
September	01.09.23-09.09.23	life-history of Phytophthora (Mastigomycotina), Penicillium (Ascomycotina)
	11.09.23-16.09.23	Puccinia (Basidiomycotina), Colletotrichum (Deuteromycotina).
	18.09.23-23.09.23	General account of Lichens, types, ecological and economic importance.
	25.09.23-30.09.23	Bryophyta: Bryophytes: General characteristics,
October	02.10.23-07-10.23	Bryophyta: classification upto classes (Smith, 1935), alternation of generations.
	09.10.23-14.10.23	Structure and reproduction (excluding development) of Marchantia (Hepaticopsida), Anthoceros (Anthocerotopsida),
	16.10.23-21.10.23	Structure and reproduction (excluding development) of Funaria (Bryopsida), Pteridophyta: General characters, classification upto classes (A. R. Smith, 2006).

	23.10.23-30.10.23	Structure and reproduction (excluding development) of Rhynia (Psilopsida): Structure and 11 12 reproduction (excluding development) of Selaginella (Lycopsida), Equisetum (Sphenopsida) and Pteris (Pteropsida). heterospory and seed habit, stelar evolution; Ecological and economic importance.
November	01.10.23-04.11.23	Gymnosperms: General characteristics, classification up to classes (Smith 1955) Distribution and economic importance; General account of paleobotany and Geological time scale.
	06.11.23-10.11.23	Morphology, anatomy and reproduction of Cycas,
Vacations	10.11.23-16.11.23	Diwali Vacations
	17.11.23-18.11.23	Morphology, anatomy and reproduction of PINUS
	20.11.23-25.11.23	Morphology, anatomy and reproduction of EpheDRA
	27.11.23-30.11.23	General account of paleobotany and Geological time scale

LESSON PLAN (Session 23-24)

Semester -Odd

Department: Botany

Class : B.sc 3 Semester

Name of the faculty: Deepika sharma

Paper code: Bot-201

Nomenclature of the paper: Biology & seed Diversity of seed plants-1

Month	Week	Topics to be covered
August	1.08.23-05.08.23	General characters and diversity of Gymnosperms (seed plants without fruits).
	07.08.23-12.08.23	Pilger and Melchior's (1954) system of classification.
	14.08.23-19.08.23	Morphology and anatomy of root, stem leaf/leaflet of Cycas
	21.08.23-26.08.23	reproductive parts including mode of reproduction, life-cycle and economic importance of Cycas
	28.08.23-29.08.23	Morphology and anatomy of root, stem leaf/leaflet of Pinus
September	04.09.23-09.09.23	reproductive parts including mode of reproduction, life-cycle and economic importance of Pinus
	11.09.23-16.09.23	Morphology and anatomy of root, stem leaf/leaflet of Ephedra
	18.09.23-23.09.23	reproductive parts including mode of reproduction, life-cycle and economic importance of Ephedra
	25.09.23-30.09.23	General characters of Angiosperms including primitive angiosperms
October	02.10.23-07.10.23	Geological Time Table
	09.10.23-14.10.23	Evolution of Seed Habit.
	16.10.23-21.10.23	-Fossils and Fossilization (Processes involved, types of Fossils & importance
	23.10.23-30.10.23	Reconstruction of the fossil plants: Lyginopteris
November	01.11.23-04.11.23	Reconstruction of the fossil plants: Williamsonia
	06.11.23-10.11.23	Reconstruction of the fossil plants Cycadeoidea (=Bennettites).
Vacations	10.11.23-16.11.23	Diwali Vacations
November	17.11.23-18.11.23	Diagrams Practice of Gymnosperms
	20.11.23-25.11.23	Comparative account of Gymnosperms Previous Year Question paper Practice
	27.11.23-30.11.23	Practice of previous year question paper

LESSON PLAN (Session 23-24)

Semester –Odd

Department: Botany

Class : B.Sc. IInd

Name of the faculty: Dr. Mandeep Kaur

Paper code: Bot-202

Nomenclature of the paper: Plant Anatomy

Month	Week	Topics to be covered
July	21.07.23-22.07.23	Introduction about the paper
	24.07.23-31.07.23	Diversity in plant forms-annuals, biennials and perennials. Meristematic tissues.
August	01.08.23-05.08.23	Tissues – Simple Permanent
	07.08.23-12.08.23	Tissues –Complex Permanent
	14.08.23-19.08.23	The shoot system- shoot apical meristem and its histological organizations
	21.08.23-26.08.23	Dicot stem & Monocot stem
	28.08.23-31.08.23	Cambium -structure and functions
September	01.09.23-02-09-23	Secondary growth in dicot stem;
	04.09.23-09.09.23	Secondary growth in dicot stem; characteristics of growth rings;
	11.09.23-16.09.23	Secondary growth in dicot stem; sap wood & heart wood, periderm.
	18.09.23-23.09.23	Anomalous secondary growth ; <i>Dracaena</i>
	25.09.23-30.09.23	Anomalous secondary growth ; <i>Boerhaavia</i> and <i>Achyranthes</i>
October	02.10.23-07-10.23	Leaf- types of leaves (simple and compound), phyllotaxy
	09.10.23-14.10.23	Epidermis –uniseriate and multiseriate, epidermal appendages and their morphological types.
	16.10.23-21.10.23	Anatomy of Dicot and monocot leaf and cell inclusions in leaves.
	23.10.23-28.10.23	Leaf abscission. Stomatal apparatus and their morphological types.
	30.10.23-31.10.23	The root system- root apical meristem and its histological organizations.
November	02.11.23 -04.11.23	Monocot and dicot root
	06.11.23-10.11.23	secondary growth in root

Vacations	10.11.23-16.11.23	Diwali Vacations
November	17.11.23-18.11.23	Structural modifications in roots- storage(<i>Beta</i>)
	20.11.23-25.11.23	Structural modifications in roots-,Respiratory (Rhizophora), Epiphytic (Vanda)
	27.11.23-30-11-23	Revision

LESSON PLAN (Session 23-24)

Semester -Odd

Department: Botany

Class : B.sc 5 th Semester

Name of the faculty: Deepika sharma

Paper code: Bot-301

Nomenclature of the paper: Plant Physiology

Month	Week	Topics to be covered
August	1.08.23-05.08.23	Plant-water Relations: Importance of water to plant life; physical properties of water
	07.08.23-12.08.23	; Imbibition, Diffusion, Osmosis and Plasmolysis
	14.08.23-19.08.23	absorption and transport of water;
	21.08.23-26.08.23	transpiration-types, physiology of stomata, factors affecting transpiration, importance of transpiration.
	28.08.23-29.08.23	Mineral Nutrition:
September	04.09.23-09.09.23	Essential macro and micro elements and their role;
	11.09.23-16.09.23	mineral uptake; deficiency symptoms.
	18.09.23-23.09.23	Transport of Organic Substances: Mechanism of phloem transport
	25.09.23-30.09.23	source-sink relationship; factors affecting translocation
October	02.10.23-07.10.23	Photosynthesis: Significance; historical aspects;
	09.10.23-14.10.23	photosynthetic pigments; action spectra and enhancement effects;
	16.10.23-21.10.23	concept of two photosystems; Z-scheme; photo-phosphorylation;
	23.10.23-30.10.23	; Calvin cycle; C4 pathway;
November	01.11.23-04.11.23	CAM plants; photorespiration.
	06.11.23-10.11.23	Respiration: ATP–the biological energy currency; aerobic and anaerobic respiration;
Vacations	10.11.23-16.11.23	Diwali Vacations
November	17.11.23-18.11.23	Krebs cycle; electron transport mechanism (chemi-osmotic theory); redox -potential; oxidative phosphorylation;
	20.11.23-25.11.23	Seed dormancy; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; physiology of senescence; fruit ripening.
	27.11.23-30.11.23	Practice from previous year Question papers

LESSON PLAN (Session 23-24)

Semester -Odd

Department: Botany

Class : B.Sc. III

Name of the faculty: Dr. Mandeep Kaur

Paper code: Bot-302

Nomenclature of the paper: Plant Ecology

Month	Week	Topics to be covered
July	21.07.23-22.07.23	Introduction about the paper Ecology
	24.07.23-31.07.23	Environmental factors-climatic (water, humidity, wind, light, temperature)
August	1.08.23-05.08.23	Environmental factors-edhaptic(soil profile, physic-chemical properties)
	07.08.23-12.08.23	Environmental factors-topographic and biotic factors (species interaction)
	14.08.23-19.08.23	Adaptation of plants to water stress (morphological and anatomical features of hydrophytes, xerophytes.)
	21.08.23-26.08.23	Adaptation of plants to salinity (morphological and anatomical features of halophytes)
	28.08.23-30.08.23	Population ecology: basic concept, characteristics
September	01.09.23-02.09.23	Population ecology: growth curves, ecotypes and ecads.
	04.09.23-09.09.23	Community ecology: concepts, characteristics(qualitative and quantitative)
	11.09.23-16.09.23	Community ecology: methods of analysis, ecological succession
	18.09.23-23.09.23	Ecosystem : structure(components) and functions(trophic levels, food chains, food web)
	25.09.23-30.09.23	Ecosystem : ecological pyramids and energy flow
October	02.10.23-07-10.23	Biogeochemical cycles; carbon, nitrogen and hydrological cycle
	09.10.23-14.10.23	hydrological cycle ,Phyto-geographical regions of india
	16.10.23-21.10.23	Phyto-geographical regions of india
	23.10.23-28.10.23	Vegetation types of India
	30.10.23-31.10.23	Forest types of India
November	02.11.23 -04.11.23	Environmental pollution: sources, types and control of air and water pollution
	06.11.23-10.11.23	Global change : green house effect, greenhouse gases
Vacations	10.11.23-16.11.23	Diwali Vacations
November	17.11.23-18.11.23	Ozone layer depletion, acid rain, biomagnifications

	20.11.23-25.11.23	Impacts of global warming, carbon trading.
	27.11.23-30.11.23	Revision