

BAIJNATH CHAUDHARY GOVT. COLLEGE FOR WOMEN, NANGAL CHAUDHARY

Lesson Plan

Name of the Associate Professor: Dr. Manoj Kumar

Semester: 1st

Class and Section: B.Sc. (Medical)

Subject: Botany

| Month | |
|---|---|
| 21 st July 2023 to 31 st July, 2023 | Bacteria: Structure, nutrition, reproduction and economic importance Cyanobacteria: General characters; life-history of Nostoc. |
| 1 st August, 2023 to 31 st August, 2023 | Algae: General characters, classification (upto classes) and economic importance; General account of algal blooms. Important features and life-history (excluding development) of Volvox, Oedogonium (Chlorophyceae), Vaucheria (Xanthophyceae), Ectocarpus (Phaeophyceae) and Polysiphonia (Rhodophyceae). |
| 1 st September, 2023 to 30 th September, 2023 | Viruses: General account of Viruses including structure of TMV and Bacteriophages Fungi: General characters, classification (upto classes) and economic importance; General account of Lichens. The Cell Envelopes: Structure and functions of Cell Wall, Plasma Membrane, Golgi Apparatus, Endoplasmic Reticulum, Lysosomes, Peroxisomes and Vacuoles. |
| 1 st October, 2023 to 31 st October, 2023 | Important features and life-history of Phytophthora (Mastigomycotina), Mucor (Zygomycotina), Penicillium (Ascomycotina), Puccinia, Agaricus (Basidiomycotina), Colletotrichum (Deuteromycotina). Ultra-structure and function: Chloroplast, Mitochondria, Nucleus and Nucleolus Chromosome: Morphology, ultra-structure - kinetochore, centromere and telomere. |
| 1 st November, 2023 to 24 th November, 2023 | Cell Cycle: General account. Cell Division: Mitosis and Meiosis - Stages and Significance. Chromosomal aberrations: Structural and Numerical - deletions, duplications, translocations, inversions, aneuploidy, polyploidy. Sex chromosomes and Sex determination in Plants. |

Manoj

BAIJNATH CHAUDHARY GOVT. COLLEGE FOR WOMEN, NANGAL CHAUDHARY

Lesson Plan

Name of the Associate Professor: Dr. Manoj Kumar

Semester: 3rd

Class and Section: B.Sc. (Medical)

Subject: Botany

| Month | |
|---|---|
| 21 st July 2023 to 31 st July, 2023 | Tissues - meristematic and permanent (simple, complex and secretory) Tissue systems (Epidermal, ground and vascular). |
| 1 st August, 2023 to 31 st August, 2023 | The Shoot system - shoot apical meristem and its histological organizations. Cambium - structure and functions. Secondary growth in dicot stem; characteristics of growth rings; sap wood and heart wood, periderm. |
| 1 st September, 2023 to 30 th September, 2023 | Anomalous secondary growth (Dracaena, Boerhaavia and Achyranthes) Leaf: Types of leaves (simple and compound); phyllotaxy. Epidermis- uniseriate and ultiseriate, epidermal appendages and their morphological types. |
| 1 st October, 2023 to 31 st October, 2023 | Anatomy of typical Monocot and Dicot leaf and cell inclusions in leaves, leaf abscission, Stomatal apparatus and their morphological types. |
| 1 st November, 2023 to 24 th November, 2023 | Root system: Root apical meristem; histological organization Secondary growth in dicot root. Structural modifications in roots: Storage (Beta), Respiratory (Rhizophora), Epiphytic (Vanda). |



BAIJNATH CHAUDHARY GOVT. COLLEGE FOR WOMEN, NANGAL CHAUDHARY

Lesson Plan

Name of the Associate Professor: Dr. Manoj Kumar

Semester: 5th

Class and Section: B.Sc. (Medical)

Subject: Botany

| Month | |
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| 21 st July 2023 to 31 st July, 2023 | Introduction to Ecology: Definition; scope and importance; levels of organization. |
| 1 st August, 2023 to 31 st August, 2023 | Environment: Introduction; environmental factors- climatic (water, humidity, wind, light, temperature), edaphic (soil profile, physico-chemical properties), topographic and biotic factors (species interaction). |
| 1 st September, 2023 to 30 th September, 2023 | Adaptations of plants to water stress and salinity (morphological and anatomical features of hydrophytes, xerophytes and halophytes). Population ecology: Basic concept; characteristics; biotic potential, growth curves; ecotypes and ecads. Community ecology: Concepts; characteristics (qualitative and quantitative analytical and synthetic); methods of analysis. |
| 1 st October, 2023 to 31 st October, 2023 | Ecological succession. Ecosystem: Structure (components) and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow). Biogeochemical cycles: Carbon, nitrogen, phosphorus and hydrological cycle. |
| 1 st November, 2023 to 24 th November, 2023 | Phyto-geography: Phyto- geographical regions of India; vegetation types of India (forests). Environmental pollution: Sources, types and control of air and water pollution. Global change: Greenhouse effect and greenhouse gases; impacts of global warming; carbon trading; Ozone layer depletion; Biomagnification. |

