**Lesson Plan**

**Dept. Of Botany**

**Class: B.Sc. (Med.) 5thSemester Subject: Botany (Theory)**

**Name of teacher : Dr. Veena Sachdeva, Dr. Renu Budhwar**

**From From Aug 2022 to Dec 2022**

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| **Time period** | **Topics** |
| **22 Aug to 27 Aug.** | Water & its properties,  Absorption of water by plants |
| **29 Aug.to 3 Sep.** | Transport of water in plants |
| **5Sep. to 10 Sep.** | Ecology |
| **12Sep. to 17 Sep.** | Abiotic factors,  Biotic factors |
| **19Sep. to 24 Sep.** | Mineral nutrients&Mineral uptake |
| **26Sep. to 1 oct.** | Stomata |
| **3 Oct. to 8 Oct.** | Transpiration |
| **10 Oct. to 19 Oct.** | Transport of organic substances: Mechanism of phloem transport; source-sink relationship; factors affecting translocation; Photosynthesis : significance; historical aspects;  **Assignment: Significance of Sustainable Development**  **Test: UNIT-1(Physiology)** |
| **27 Oct. to 5 Nov.** | Photosynthetic pigments; action spectraand enhancement effects; concept of two photosystems.  Adaptations of plants to water stress and salinity  **Assignment: Plant Pigments** |
| **7 Nov. to 12 Nov.** | Z-scheme; photophosphorylation;  Calvin cycle; C4 pathway; CAM plants; photorespiration.  Population ecology  **Assignment: Photorespiration** |
| **4 Nov. to 19 Nov.** | Growth and development: Definitions; phases of growth and development; seed-dormancy; plant movements.  Community ecology  **Assignment: Collection of Xerophytes**  **Test: Unit-1(Ecology)** |
| **21 Nov. to 26 Nov.** | The concept of photoperiodism; physiology of flowering; florigen concept; physiology of senescence; fruit ripening.  Ecosystem: Structure and functions  **Assignment: Food chain, Food web and Ecological Pyramids** |
| **28 Nov. to 3 Dec.** | Plant hormones- auxins, gibberellins, cytokinins, abscissic acid and ethylene, history oftheir discovery, mechanism of action.  **Assignment: Plant hormones** |
| **5 Dec. to 10 Dec.** | Photo-morphogenesis; Phytochromes and their discovery, physiological role and mechanism of action.  Biogeochemical cycles: Carbon, nitrogen, phosphorus and hydrological cycle.  **Assignment**:**Biogeochemical cycles** |
| **12 Dec. to 17 Dec.** | Phyto-geography: Phyto- geographical regions of India; vegetation types of India (forests). Environmental pollution: Sources, types and control of air and waterpollution.  **Assignment: Different Geographical regions of India**  **Test: Unit-2(Physiology and Ecology)**  Global change: Greenhouse effect and greenhouse gases; impacts of global-warming; carbon trading; Ozone layer depletion; Bio-magnification.  **Assignment: Project report on Pollution** |

**Class: B.Sc. (Med.) 5th Semester Subject: Botany (Practical)**

**Name of teacher : Dr. Veena Sachdeva, Dr. Renu Budhwar**

**From Aug 2022 to Dec 2022**

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| **Time period** | **Topics** |
| **22 Aug to 27 Aug.** | Plant Physiology |
| **29 Aug.to 3 Sep.** | Hydrophytes |
| **5Sep. to 10 Sep.** | Plant Physiology |
| **12Sep. to 17 Sep.** | Hydrophytes |
| **19Sep. to 24 Sep.** | Plant Physiology |
| **26Sep. to 1 oct.** | Plant Physiology |
| **3 Oct. to 8 Oct.** | Xerophytes |
| **10 Oct. to 19 Oct.** | Xerophytes |
| **27 Oct. to 5 Nov.** | Ecology |
| **7 Nov. to 12 Nov.** | Ecology |
| **4 Nov. to 19 Nov.** | Plant Physiology |
| **21 Nov. to 26 Nov.** | Ecology |
| **28 Nov. to 3 Dec.** | Plant Physiology |
| **5 Dec. to 10 Dec.** | Ecology |
| **12 Dec. to 17 Dec.** | Ecology |

**Class: B.Sc. (Med.) 3rdSemester Subject: Botany (Theory)**

**Name of teacher : Dr. Nidhi Verma**

**From Aug 2022 to Dec 2022**

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| **Time period** | **Topics** |
| **22 Aug to 27 Aug.** | Diversity in Plant forms. |
| **29 Aug.to 3 Sep.** | Plant tissues.  **Test** |
| **5Sep. to 10 Sep.** | Introduction to Gymnosperms  Classification of Gymnosperms  Fossils and Fossilization & Geological Time-scale |
| **12Sep. to 17 Sep.** | Fossil Gymnosperms  Study of *Cycas* |
| **19Sep. to 24 Sep.** | *Cycas* |
| **26Sep. to 1 oct.** | *Pinus*  **Test** |
| **3 Oct. to 8 Oct.** | *Ephedra* |
| **10 Oct. to 19 Oct.** | General characters of Angiosperms  Shoot-Apical Meristem |
| **27 Oct. to 5 Nov.** | Cambium |
| **7 Nov. to 12 Nov.** | Secondary growth in stem |
| **4 Nov. to 19 Nov.** | Wood  **Test** |
| **21 Nov. to 26 Nov.** | Anomalous secondary growth in Stem |
| **28 Nov. to 3 Dec.** | Leaf – Types& Phyllot0axy |
| **5 Dec. to 10 Dec.** | Leaf Anatomy |
| Stomata |
| **12 Dec. to 17 Dec.** | Root- Apical Meristem |
| Structural modifications in Roots |

**Class: B.Sc. (Med.) 3rdSemester Subject: Botany (Practical)**

**Name of teacher : Dr. Nidhi Verma**

**Practical lesson plan: From Aug 2022 to Dec 2022**

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| **Time period** | **Topics** |
| **22 Aug to 27 Aug.** | Preparation of permanent slides |
| **29 Aug.to 3 Sep.** | Permanent slides and material of monocot stem |
| **5Sep. to 10 Sep.** | Permanent slides and material of dicot stem. |
| **12Sep. to 17 Sep.** | Permanent slides and material of*Cycas* |
| **19Sep. to 24 Sep.** | Permanent slides and material of *Cycas* |
| **26Sep. to 1 oct.** | Permanent slides and material of *Pinus* |
| **3 Oct. to 8 Oct.** | Permanent slides and material of *Pinus* |
| **10 Oct. to 19 Oct.** | Leafmodifications |
| **27 Oct. to 5 Nov.** | Monocot & Dicot Leaf |
| **7 Nov. to 12 Nov.** | Permanent slides and material of *Ephedra* |
| **4 Nov. to 19 Nov.** | Monocot & Dicot Root |
| **21 Nov. to 26 Nov.** | Root modifications |
| **28 Nov. to 3 Dec.** | Root modifications |
| **5 Dec. to 10 Dec.** | Stem modifications |
| **12 Dec. to 17 Dec.** | Leaf collection |
| Stem modifications |

**Class: B.Sc. (Med.)1stSemester Subject: Botany (Theory)**

**Name of teacher : Dr. Savita Kadian, Ms. Mousam**

**From Aug 2022 to Dec 2022**

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| **Time period** | **Topics** |
| **22 Aug to 27 Aug.** | Bacteria- General characters, |
| **29 Aug.to 3 Sep.** | Bacteria- Nutrition, Reproduction, Economic importance |
| **5Sep. to 10 Sep.** | General characters of Algae- Classification, Economic importance |
| **12Sep. to 17 Sep.** | Important features and life-history (excluding development) of *Volvox*, *Oedogonium*  (Chlorophyceae), |
| **19Sep. to 24 Sep.** | *Vaucheria* (Xanthophyceae), *Ectocarpus* (Phaeophyceae) and  *Polysiphonia* (Rhodophyceae) |
| **26Sep. to 1 oct.** | **Viruses:** General account of Viruses including structure of TMV and Bacteriophages |
| **3 Oct. to 8 Oct.** | **Fungi:** General characters, classification (upto classes) and economic importance;  General account of Lichens |
| **10 Oct. to 19 Oct.** | **Cell Division**: Mitosis and Meiosis - Stages and Significance |
| **27 Oct. to 5 Nov.** | **Chromosomal aberrations**: Structural and Numerical - deletions, duplications,  translocations, inversions, aneuploidy, polyploidy |
| **7 Nov. to 12 Nov.** | Test. |
| **4 Nov. to 19 Nov.** | Important features and life-history of *Phytophthora* (Mastigomycotina), *Mucor* |
| **21 Nov. to 26 Nov.** | Important features and life-history of *Phytophthora* (Mastigomycotina), *Mucor* |
| **28 Nov. to 3 Dec.** | (Zygomycotina), *Penicillium* (Ascomycotina), *Puccinia* |
| **5 Dec. to 10 Dec.** | *Agaricus* (Basidiomycotina),  *Colletotrichum* (Deuteromycotina) |
| **Ultra-structure and function**: Chloroplast, Mitochondria, Nucleus and Nucleolus  **Chromosome**:Morphology,ultra-structure kinetochore, centromere and telomere |
| **12 Dec. to 17 Dec.** | **Cell Cycle:** General account |
|  | Sex chromosomes and Sex determination in Plants |
|  | **Revision** |
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**Class: B.Sc. (Med.)1stSemester Subject: Botany (Practical)**

**Name of teacher : Dr. Savita Kadian, Ms. Mousam**

**From Aug 2022 to Dec 2022**

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| **Time period** | **Topics** |
| **22 Aug to 27 Aug.** | Study parts of microscope |
| **29 Aug.to 3 Sep.** | permanent slides and material of *volvox*. |
| **5Sep. to 10 Sep.** | Permanent slides and material of *oedogonium*. |
| **12Sep. to 17 Sep.** | Permanent slides and material of *Vaucheria*. |
| **19Sep. to 24 Sep.** | Permanent slides and material of *Ectocarpus*. |
| **26Sep. to 1 oct.** | Permanent slides and material of *Polysiphonia,* |
| **3 Oct. to 8 Oct.** | Permanent slides and material of *Mucor* |
| **10 Oct. to 19 Oct.** | Permanent slides and material of *Agaricus* |
|  | Permanent slides and material of  *Coliotricum.* |
| **27 Oct. to 5 Nov.** | Permanent slides and material of *phytopthora*. |
| **7 Nov. to 12 Nov.** | Permanent slides and material of *Penicillium* |
| **4 Nov. to 19 Nov.** | Permanent slides and material of Puccinia. |
| **21 Nov. to 26 Nov.** | Permanent slides of mitosis and meiosis. |
| **28 Nov. to 3 Dec.** | Preparation of slide of onion root tip |
| **5 Dec. to 10 Dec.** | Identification of collection |
| **12 Dec. to 17 Dec.** | Preparation of slide of onion root tip |
|  | Revision of slides, Specimens of Lichens |