**Lesson Plan**

**Practical**

**Name of the Assistant Professor:**

**Class and Lab 53B : B.Sc. (Med.) 2nd Semester**

**Subject lesson plan: From March 2022 to June 2022**

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| **Week & Date****Week 1** | **Topics** |
| 1 April- 2 April | Morphology of *Marcahantia*Reproduction in *Marchantia* |
| **Week 2** |  |
| 4 April- 9 April | Morphology of *Anthoceros*Reproduction in *Anthoceros*RevisionTest |
| **Week 3** |  |
| 11 April- 16April | Morphology of *Funaria*Reproduction in *Funaria*RevisionTest |
| **Week 4** |  |
| 18 April- 23 April | Morphology of *Funaria*Reproduction in *Funaria* |
| **Week 5** |  |
| 25 April- 30 April | Morphology of *Selaginella*Reproduction in *Selaginella* |
| **Week 6** |  |
| 2 May- 7 May | Morphology of *Equisetum*Reproduction in *Equisetum* |
| **Week 7** |  |
| 9 May- 14 May | Practice of section cutting of *Equisetum* |
| **Week 8** |  |
| 16 May- 21 May | Staning procedure of *Equisetum*RepeatRevision |
| **Week 9** |  |
| 23 May- 28 May | Morphology of *Pteris*Reproduction in *Pteris*RevisionTestField collection |
| **Week 10** |  |
| 30 May-4 June | Permanent slides of stellar systemRevisionTestField collection |
| **Week 11** |  |
| 6 June- 11 June | Numerical on complementary genesNumerical on supplementary genesNumerical on Duplicate genesNumerical on dominant Genes |
| **Week 12** |  |
| 13 June- 18 June | Monohybrid crossDihybrid crossRevision |
| **Week 13** |  |
| 20 June- 25 June | Revision of all material and permanent slides of BryophytaRevision of all material and permanent slides of Pteridophyta |
| **Week 14** |  |
| 27 June- 30June | **Revision** |

**Lesson Plan**

**Practical**

**Name of the Assistant Professor:**

**Class and Lab : B.Sc. (Med.) 4th Semester**

**Subject lesson plan: From March 2022 to June 2022**

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| **Week & Date****Week 1**  | **Topics** |
| 1 April- 2 April | Classification & Taxonomic Ranks |
| **Week 2** |   |
| 4 April- 9 April | Herbarium & Botanical Gardens |
| **Week 3** |  |
| 11 April- 16April | Types of Inflorescence |
| **Week 4** |  |
| 18 April- 23 April | Flower description  |
| **Week 5** |  |
| 25 April- 30 April | Flower description  |
| **Week 6** |  |
| 2 May- 7 May | Flower description  |
| **Week 7** |  |
| 9 May- 14 May | Flower description  |
| **Week 8** |  |
| 16 May- 21 May | Flower description  |
| **Week 9** |  |
| 23 May- 28 May | Flower description  |
| **Week 10** |  |
| 30 May-4 June | To study Pollen germination & Flower description  |
| **Week 11** |  |
| 6 June- 11 June |  Flower description & Types of Ovules |
| **Week 12** |  |
| 13 June- 18 June | Flower description and to study stages of Embryo developmentContinued |
| **Week 13** |  |
| 20 June- 25 June | Types of Seeds & Fruits |
| **Week 14** |  |
| 27 June- 30June | **Revision** |

**Lesson Plan**

**Practical**

**Name of the Assistant Professor:**

**Class and Lab : B.Sc. (Med.) 6th Semester**

**Subject lesson plan: From March 2022 to June 2022**

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| **Week & Date****Week 1** | **Topics** |
| 28 Marchl- 2 April | Protein test - 1Protein test -2 |
| **Week 2** |  |
| 4 April- 9 April | fat test – 1fat test – 2 |
| **Week 3** |  |
| 11 April- 16April | Carbohydrates - monosaccharide test - 1Carbohydrates – monosaccharide test - 2 |
| **Week 4** |  |
| 18 April- 23 April | Carbohydrates – starch test |
| **Week 5** |  |
| 25 April- 30 April | Detection of heat released during Respiration |
| **Week 6** |  |
| 2 May- 7 May | Detection of CO2 during aerobic respiration Continued … |
| **Week 7** |  |
| 9 May- 14 May | Sterilization techniques-1 & 2 |
| **Week 8** |  |
| 16 May- 21 May | Preparation of MS medium 1Preparation of MS medium 2 |
| **Week 9** |  |
| 23 May- 28 May | Test of biochemistry practicals |
| **Week 10** |  |
| 30 May-4 June | Demonstration of anther culture-1Demonstration of anther culture-2Demonstration of protoplast isolationDemonstration of protoplast culture |
| **Week 11** |  |
| 6 June- 11 June | Identification of cereal specimensIdentification of pulses specimensIdentification of vegetable specimensIdentification of spices specimens |
| **Week 12** |  |
| 13 June- 18 June | Field visit-1Field visit-2 |
| **Week 13** |  |
| 20 June- 25 June | Identification of fiber specimenIdentification of beverages specimens |
| **Week 14** |  |
| 27 June- 30June | **Revision** |

**Lesson Plan**

**Name of the Assistant Professor:**

**Class and Section : B.Sc. (Med.) 2nd Semester**

**Subject lesson plan: From March 2022 to June 2022**

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| **Week & Date****Week 1**  | **Topics****Assignment -**  Bryophytes |
| 1 April- 2 April | General characters of Bryophytes Classification of BryophytesAlternation of generationsEconomic Importance of Bryophytes Evolution of Bryophytes Range of Thallus in Bryophytes**Oral Test**  |
| **Week 2** |  **Assignment** - Marchantia |
| 4 April- 9 April | Structure of Marchantia Reproduction in MarchantiaTest General characters of BryophytesStructure of AnthocerosReproduction in AnthocerosMorphological structure of FunariaTopic Discussion |
| **Week 3** | **Assignment -**  Anthoceros and Funaria |
| 11 April- 16April | Anatomy of FunariaReproduction inFunariaTest of Marchantia and AnthocerosGeneral characters of PteridophyteHeterosporyApospory and Apogamy |
| **Week 4** | **Assignment -** Pteridophytes |
| 18 April- 23 April | Classification of PteridophytesEconomic Importance of PteridophytesTest-Bryophytes |
| **Week 5** |  **Assignment -**  Rhynia and Selaginella |
| 25 April- 30 April | General account of stellar evolutionAlternation of generations in pteridophytesOral test - Economic Importance of Bryophytes)Structure and Reproduction of RhyniaStructure of Selaginella |
| **Week 6** |  **Assignment-**  Equisetum |
| 2 May- 7 May | Anatomy of SelaginellaReproduction in SelaginellaReproduction in Selaginella ContdStructure of Equisetum Anatomy of Equisetum |
| **Week 7** |  **Assignment -**  Equisetum |
| 9 May- 14 May | Reproduction in EquisetumReproduction in EquisetumGroup Discussion on General Characters of Pteridophytes Morphology of PterisAnatomy of Pteris |
| **Week 8** |  **Assignment -** Pteris |
| 16 May- 21 May | Reproduction in PterisTest- EquisetumComparative account on sporophytes of Marchantia, Anthoceros, FunariaTest –PteridophytesRevision/Problem Solving of BryophytesRevision Problem Solving of Pteridophytes |
| **Week 9** |  **Assignment -**  DNA-Protein Interaction |
| 23 May- 28 May | Revision Problem Solving of PteridophytesDNA- The genetic materialStructure of DNADNA-Protein InteractionThe Nucleosome model IThe Nucleosome model II |
| **Week 10** |  **Assignment -**  DNA |
| 30 May-4 June |  Revision |
| **Week 11** |  **Assignment -**  Mendelism  |
| 6 June- 11 June | The Nucleosome model IIISatellite and Repetetive DNATest –DNAMendelismLaw of SegregationLaw of Independent AssortmentLinkage Analysis |
| **Week 12** |  **Assignment -**  Mitochondrial DNA and Plasmid DNA |
| 13 June- 18 June |  Complementary Genes Supplementary GenesEpistasis, Dominant GenesTest –MendelismPresence and Function of Mitochondrial DNA |
| **Week 13** |  **Assignment -**  Transcription |
| 20 June- 25 June | **Topic Discussion**Presence and Function of Mitochondrial DNAPresence and Function of Plasmid DNAPlasmids, Spontaneous MutationInduced Mutation 1, Induced Mutation 2DNA Damage, DNA RepairModern Concept of GenesRNA and Ribosomes, TranscriptionStructure of ProteinsTransposable Genetic MaterialTest DNA, Transcription  |
| **Week 14** |  **Assignment -**  DNA Replication |
| 27 June- 30June | DNA Replication IDNA Replication IIGenetic Code IGenetic Code IIProtein Synthesis 1Protein Synthesis 1ITest Protein Synthesis Regulation of Gene Expression in ProkaryotesIRegulation of Gene Expression in ProkaryotesIIRegulation of Gene Expression in EukaryotesIRegulation of Gene Expression in EukaryotesII |

**Lesson Plan**

**Name of the Assistant Professor:**

**Class and Section A : B.Sc. (Med.) 4th Semester**

**Subject lesson plan: From March 2022 to June 2022**

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| **Week & Date****Week 1**  | **Topics****Assignment -** Botanical Names |
| 1 April- 2 April | Introduction to AngiospermsTaxonomy and SystematicsTaxonomy and SystematicsComponents of TaxonomyComponents of Taxonomy **Oral Test**  |
| **Week 2** |  **Assignment** - Taxonomy |
| 4 April- 9 April | Role of ChemotaxonomyRole of ChemotaxonomyCytotaxonomy & Taximetrics in relation to TaxonomyCytotaxonomy & Taximetrics in relation to TaxonomyTopic Discussion**Class Test -** Chemotaxonomy, Cytotaxonomy & Taximetrics  |
| **Week 3** | **Assignment -** Plant Identification |
| 11 April- 16April | Botanical Nomenclature, Principles and RulesPrinciple of PriorityPrinciple of PriorityKeys to Identification of PlantsType Concept  |
| **Week 4** | **Assignment -** Taxonomic Ranks |
| 18 April- 23 April | Taxonomic RanksBentham & Hooker System of ClassificationEngler & Prantl System of Classification Engler & Prantl System of ClassificationTopic Discussion - Taxonomy & Classification**Class Test - Classification System**Flower: A Modified Shoot and Floral Terms Type of Inflorescence |
| **Week 5** |  **Assignment -** Inflorescence |
| 25 April- 30 April | Topic Discussion - Floral Terms**Internal Test** - Unit I & II (Paper 1)Microsporangia MicrosporogenesisMicrosporangium wall & dehiscence |
| **Week 6** |  **Assignment -** Gametogenesis |
| 2 May- 7 May | Topic Discussion - MicrosporogenesisMale GametophytePollen Grain & its structure Pollen Germination IPollen Germination II |
| **Week 7** |  **Assignment -** Pollen Grains of Angiosperms |
| 9 May- 14 May | **Class Test** - Unit I (Paper 2)Types of Pollination & Agencies of PollinationPollen-Pistil InteractionPollen-Pistil InteractionSelf - IncompatibilitySelf - Incompatibility |
| **Week 8** |  **Assignment -** Pollination in Angiosperms |
| 16 May- 21 May | Topic Discussion -Diagnostic Features of Family RannunculaceaeEconomic Importance of Family RannunculaceaeBrassicaseae - Diagnostic FeaturesBrassicaceae - Economic ImportanceMalvaceae - Diagnostic FeaturesMalvaceae - Economic Importance |
| **Week 9** |  **Assignment -** Economic Importance of Angiosperms |
| 23 May- 28 May | Topic Discussion - Above FamiliesEuphorbiaceae - Diagnostic FeaturesEuphorbiaceae - Economic ImportanceRutaceae - Diagnostic Features & Economic ImportanceTopic Discussion - Above Families**Class Test** - Above Families (Rannunculaceae - Rutacaeae |
| **Week 10** |  **Assignment -** Angiospermic Families |
| 30 May-4 June | Revision |
| **Week 11** |  **Assignment -**  Angiospermic Families |
| 6 June- 11 June | Structure of MegasporangiaMegasporogenesis (I)Megasporogenesis (II)MegagametogenesisFemale Gametophyte (Mono-, Bisporic)Female Gametophyte (Tetrasporic) |
| **Week 12** |  **Assignment -** Female Gametophyte |
| 13 June- 18 June |  Topic DiscussionDouble FertilizationEndosperm & Its typesEconomic importance of various families**Internal Test -** (Unit III & IV, Paper 2) |
| **Week 13** |  **Assignment -** Endosperms & Embryos |
| 20 June- 25 June | **Topic Discussion**Endosperm & Its typesEmbryogenesis in Dicots Embryogenesis in MonocotsPolyembryonyTopic Discussion - Embryo & Endosperms |
| **Week 14** |  **Assignment -** Types of Seeds and fruits |
| 27 June- 30June | Fruit (I)Fruit (II)Cucurbitaceae - Diagnostic FeaturesCucurbitaceae - Economic ImportanceStructure of Monocot Structure of Dicot Seeds Apiaceae - Diagnostic FeaturesApiaceae - Economic ImportanceAsclepiadaceae - Diagnostic Features & Economic ImportanceLamiaceae - Diagnostic Features & Economic ImportanceTopic Discussion - Above Families |

**Lesson Plan**

**Name of the Assistant Professor:**

**Class and Section : B.Sc. (Med.) 6th Semester**

**Subject lesson plan: From March 2022 to June 2022**

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| **Week & Date****Week 1**  | **Topics****Assignment -** Assignment –Basics of Enzymology |
| 28 March- 2 April | Discovery and nomenclature of enzymesCharacteristics of enzymesConcept of holoenzymes and apoenzymesCoenzymes and cofactorsRegulation of enzyme activity IRegulation of enzyme activity II |
| **Week 2** |  **Assignment** - Respiration |
| 4 April- 9 April | Mechanism of enzyme actionClass test of enzymologyATPAerobic respirationAnaerobic respirationKreb`s cycle |
| **Week 3** | **Assignment -**  Oxidative phosphorylation |
| 11 April- 16April | Chemiosmotic theoryRedox potentialOxidative phosphorylationPentose phosphate pathwayTest of respirationStructure and function of lipids |
| **Week 4** | **Assignment -** fatty acids |
| 18 April- 23 April | Fatty acid biosynthesis and β OxidationSaturated and unsaturated fatty acidsStorage and mobilization of fatty acidsTest of lipid metabolism Nitrogen metabolism |
| **Week 5** |  **Assignment -**  recombinant DNA technology |
| 25 April- 30 April | Internal assessment test (unit 1 and unit 2 ) Tools of recombinant DNA technologyCloning vectors Genomic and c DNA library Transposable elements Techniques of recombinant DNA technology |
| **Week 6** |  **Assignment-**  Plant tissue culture |
| 2 May- 7 May | Cloning vectors Genomic and c DNA library Transposable elements Aspects of plant tissue culture Cellular totipotency |
| **Week 7** |  **Assignment -**  genetic transformation |
| 9 May- 14 May | Oral test –genetic engineeringDifferentiation Morphogenesis Biology of *Agrobacterium* sp.Vectors for gene delivery |
| **Week 8** |  **Assignment -** cereals |
| 16 May- 21 May |  Marker genes Test of unit 4PAPER 2- Food plants – riceWheat MaizePulses – gram |
| **Week 9** |  **Assignment -**  pulses and fibre yielding crops |
| 23 May- 28 May | Group discussion**Test of food plants** Arhar Pea Vegetables – potatoTomatoOnion Test of unit 1  |
| **Week 10** |  **Assignment -**  Oil yielding plants |
| 30 May-4 June | Revision |
| **Week 11** |  **Assignment -**spices |
| 6 June- 11 June | Fibres – cotton  Jute  Flax Groundnut MustardSunflowerCoconut Introduction to spicesSpices – coriander |
| **Week 12** |  **Assignment -**  Cinchona and Rauwolfia sp. |
| 13 June- 18 June | FerulaTurmericGinger Internal assessment test ( unit 1 and 2 ) Clove Oral discussionCinchona sp. |
| **Week 13** |  **Assignment -**  Medicinal plants |
| 20 June- 25 June | **Topic Discussion***Rauwolfia sp.* Atropa sp. Opium sp.Cannabis sp.Azadirachta sp.Withania sp.BeveragesTea  Coffee |
| **Week 14** |  **Assignment -**Beverages |
| 27 June- 30June | Sugarcane Timber yielding plantsTest of sugar and timber yielding plants Energy plantation Hevea sp. Biofuels  |