

# Government College, Chhachhrauli

## Summary of Lesson Plan

Name of Teacher: Dr. Komal

Academic Session : 2023-24

Class :B.Sc. Medical

Semester : 2nd

Subject : Botany

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	<ul style="list-style-type: none"><li>● Botanical nomenclature and major rules of ICBN and ICN; Keys to identification of plants.</li><li>● Ecology: Definition; scope and importance; levels of organization</li></ul>	13 feb to 31 feb	
2	<ul style="list-style-type: none"><li>● General introduction and importance of herbaria and botanical gardens. Documentation of Floristic Diversity: Brief idea about floras, monographs and journals. Brief idea of taxonomic evidences</li><li>● Environmental factors- climatic factors, edaphic factors, topographic; and Biotic factors.</li></ul>	01 march to 15 march	Test -1
3	<ul style="list-style-type: none"><li>● Types of inflorescence, flower and parts of flower. Artificial, natural and phylogenetic classifications.</li><li>● Bentham and Hooker system of classification (upto series), Angiosperm Phylogeny Group-general account.</li><li>● Population Ecology: Basic concept; characteristics; biotic potential, growth curves; ecotypes and ecads.</li><li>● Community Ecology: Concepts; characteristics (qualitative and quantitative-analytical and synthetic); methods of analysis; ecological succession).</li></ul>	16 march to 23 march	Assignment -1

4	<ul style="list-style-type: none"> <li>● Diagnostic features and economic importance of the following families: Ranunculaceae, Brassicaceae, Malvaceae, Euphorbiaceae, Rutaceae, Leguminosae,</li> <li>● Ecosystem: Structure and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow).</li> <li>● Phyto-geography: Phyto-geographical regions of India; vegetation types of India (forests). trading.</li> <li>● Biodiversity: levels, types, significance, threats and conservation.</li> </ul>	<p style="text-align: center;"><b>01 april to 15 april</b></p>	Test-2
5	<p>Diagnostic features and economic importance of the following families Apocynaceae, Lamiaceae, Solanaceae, Asteraceae, Poaceae and Orchidaceae</p>	<p style="text-align: center;"><b>16 april to 30 april</b></p>	Collection Tour for herbarium preparation
6	<p>Global Change: Greenhouse effect and greenhouse gases; impacts of global warming; carbon trading. Biodiversity: levels, types, significance, threats and conservation.</p>	<p style="text-align: center;"><b>01 may to15 may</b></p>	Revision

# Government College, Chhachhrauli

## Summary of Lesson Plan

Name of Teacher: ...Dr. Komal

Academic Session : 2023-24

Class : B.Sc. Medical

Semester : 4th

Subject : Botany

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	Taxonomy and Systematics, fundamental components of taxonomy (identification, classification, description, nomenclature and phylogeny). Role of chemotaxonomy, Cytotaxonomy and taximetrics in relation to taxonomy. Botanical Nomenclature, principles and rules, principle of priority.	01 Jan to 07 Jan	
2	Flower and Types of Inflorescence Salient features of the systems of classification of angiosperms proposed by Bentham & Hooker and Engler & Prantl. Diversity of Flowering Plants: Diagnostic features and economic importance of the following families: Ranunculaceae, Brassicaceae, Malvaceae, Euphorbiaceae	08 Jan to 15 Jan	Test -1
3	Flower-a modified shoot; functions of various floral parts Microsporangium, its wall and dehiscence mechanism. Microsporogenesis, pollen grains and its structure (pollen wall). Families: Rutaceae, Leguminosae, Apiaceae, Asclepiadaceae, Lamiaceae, Pollen-pistil interaction; self incompatibility.	01 feb to 15 feb	Assignment -1
4	Type concept, taxonomic ranks. Keys to identification of plants Pollination (types and agencies); pollen germination (microgametogenesis). Male gametophyte	16 feb to 29 feb	Test-2
5	Families: Solanaceae, Asteraceae, Liliaceae and Poaceae Structure of Megasporangium (ovule), its curvatures; Megasporeogenesis and Megagametogenesis. Female gametophyte (mono-, bi- and Tetrasporic). Double fertilization	01 march to 15 march	Assignment-2

6	Structure of Dicot and Monocot seed. Embryogenesis in Dicot and Monocot; polyembryony	<b>15 march to 22 march</b>	Collection tour
7	Fruit types; dispersal mechanisms in fruits and seeds Endosperm types and its biological importance	<b>01 april to 15 april</b>	Class test Revision

# Government College, Chhachhrauli

## Summary of Lesson Plan

Name of Teacher: Dr. Komal

Academic Session : 2023-24

Class : B.Sc. Medical

Semester : 6th

Subject : Botany

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	<b>Basics of Enzymology:</b> Discovery and nomenclature; characteristics of enzymes; concept of holoenzyme, apoenzyme, coenzyme and co-factors; regulation of enzyme activity; mechanism of action. Origin, distribution, botanical description, brief idea of cultivation and uses of the following: <b>Food plants- Cereals: Rice</b>	<b>01 Jan to 07 Jan</b>	Test -1
2	<b>Growth and development:</b> Definitions; phases of growth and development; Plant hormones- auxins, gibberellins, cytokinins, abscissic acid and ethylene, history of their discovery, mechanism of action Food plants: Wheat and Maize	<b>08 Jan to 15 Jan</b>	Assignment-1
3	<b>Lipid metabolism:</b> Structure and functions of lipids; fatty acid biosynthesis; B-oxidation; saturated and unsaturated fatty acids; storage and mobilization of fatty acids. <b>Pulses-</b> (Gram, Arhar and Pea). <b>Vegetables-</b> (Potato, Tomato and Onion).	<b>01 feb to 15 feb</b>	Test -2
4	<b>Nitrogen metabolism:</b> Biology of nitrogen fixation; importance of nitrate reductase and its regulation; ammonium assimilation. <b>Fibers-</b> Cotton, Jute and Flax. <b>Oils-</b> Groundnut, Mustard and Coconut	<b>16 feb to 29 feb</b>	Assignment-2

5	<p><b>Genetic engineering and Biotechnology:</b> Tools and techniques of recombinant DNA technology; cloning vectors; genomic and cDNA library; transposable elements; aspects of plant tissue culture; cellular totipotency, differentiation and morphogenesis; biology of Agro-bacterium; vectors for gene delivery and marker genes Morphology of plant part used, brief idea of cultivation and uses of the following: <b>Spices-</b> Coriander, Ferula, Ginger, Turmeric, Cloves. <b>Medicinal Plants-</b> <i>Cinchona, Rauwolfia, Atropa, Opium, Cannabis, Neem.</i></p>	<p><b>01 march to 15 march</b></p>	
6	<p>photo-morphogenesis; phytochromes and their discovery, physiological role and mechanism of action Botanical description and processing of <b>Beverages-</b> Tea and Coffee. <b>Rubber-</b> <i>Hevea.</i></p>	<p><b>15 march to 22 march</b></p>	<p>Industrial visit for preparation of pollution report</p>
7	<p>Botanical description and processing of <b>Sugar-</b> Sugarcane. General account and sources of timber; energy plantations and bio-fuels</p>	<p><b>01 april to 15 april</b></p>	<p>Class Test revision</p>