

Government College, Chhachhrauli

Summary of Lesson Plan

Name of Teacher: Dr. Komal Academic Session : 2023-24

Class: B.Sc Semester : 1st Subject : Diversity of Microbes, Algae, Fungi and Archegoniates

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	Bacteria , general account of cyanobacteria, General characters of algae, classification and economic importance, Important features and economic importance of Volvox, Vaucharia ,Ectocarpus, polysiphonia ,General characters of viruses including structure of TMV and bacteriophage	01 Aug to 15 Aug	
1	Fungi: General characters, Introductory classification; economic importance; and life-history of Phytophthora, (Mastigomycotina), Penicillium (Ascomycotina), Puccinia (Basidiomycotina)	16 Aug to 31 Aug	
2	Colletotrichum (Deuteromycotina), General account of Lichens, types, ecological and economic importance. Bryophyta: Bryophytes: General characteristics, classification upto classes (Smith, 1935), alternation of generations, structure and reproduction (excluding development) of Marchantia (Hepaticopsida)	01 Sep to 15 Sep	Assignment-1
2	Anthoceros (Anthocerotopsida), Funaria (Bryopsida), ecological and economic importance of bryophytes.	16 Sep to 30 Sep	Test-1
3	Pteridophyta: General characters, classification upto classes (A.R. Smith, 2006), structure and reproduction (excluding development) of Rhynia (Psilopsida) Structure and reproduction (excluding development) of Selaginella (Lycopsida)	01 Oct to 15 Oct	Test- 2

3	Equisetum (Sphenopsida) and Pteris (Pteropsida). heterospory and seed habit, stelar evolution; Ecological and economic importance. Distribution and economic importance; General account of paleobotany and Geological time scale.	16 Oct to 31 Oct	Assignment-2
4	Gymnosperms: General characteristics, classification up to classes (Smith 1955), morphology, anatomy and reproduction of Cycas, Pinus	01 Nov to 15 Nov	
4	Ephedra (developmental details not to be included Revision	16 Nov to 24 Nov	

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Summary of Lesson Plan

Name of Teacher: Dr. Komal Academic Session : 2023-24

Class: B.Sc Semester : 3rd Subject : Biology and Diversity of Seed Plants-I
and Plant Anatomy

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	General characters and diversity of Gymnosperms (seed plants without fruits).Pilger and Melchior's (1954) system of classification. Geological Time Table, Evolution of Seed Habit. Diversity in plant forms-annuals, biennials and perennials. Palaeobotany-Fossils and Fossilization (Processes involved, types of Fossils and Importance of Fossils,	01 Aug to 15 Aug	
1	Reconstruction of the following fossil plants: Lyginopteris , Williamsonia Cycadeoidea	16 Aug to 31 Aug	
2	Morphology and anatomy of root, stem leaf/leaflet and reproductive parts including mode of reproduction, life-cycle and economic importance of the following: Cycas, The Shoot system ,Tissues, Cambium-structure	01 Sep to 15 Sep	Assignment-1
2	Pinus, Ephedra, Secondary growth in dicot stem, Anomalous secondary growth (Dracaena, Boerhaavia and Achyranthes) ,Leaf-Types of leaves (simple and compound); phyllotaxy.	16 Sep to 30 Sep	Test-1
3	Epidermis,Anatomy of typical Monocot and Dicot leaf and cell inclusions in leaves, leaf abscission Stomatal apparatus and their morphological types.	01 Oct to 15 Oct	Test- 2

3	Root system- the root apical meristem; the histological organization (monocot and dicot root).	16 Oct to 31 Oct	Assignment-2
4	Secondary growth in dicot root. Structural modifications in roots- storage (Beta), Respiratory (Rhizophora), Epiphytic (Vanda)	01 Nov to 15 Nov	
4	General characters of Angiosperms including primitive angiosperms (Amentiferae, Ranales, Magnoliales). Revision	16 Nov to 24 Nov	

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Summary of Lesson Plan

Name of Teacher: Dr. Komal Academic Session : 2023-24

Class: B.Sc Semester : 5th Subject : Plant Physiology and Ecology

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	Plant-water Relations: Importance of water to plant life; physical properties of water, Imbibition, Diffusion, Osmosis and Plasmolysis; Absorption and transport of water, transpiration-types, physiology of stomata, factors affecting transpiration, importance of transpiration.	01 Aug to 15 Aug	
1	Introduction to Ecology: Definition; scope and importance; levels of organization. Environment: Introduction; environmental factors- climatic (water, humidity, wind, light, temperature), edaphic (soil profile, physico-chemical properties),	16 Aug to 31 Aug	
2	Mineral Nutrition: Essential macro and micro elements and their role; mineral uptake, deficiency symptoms. Transport of Organic Substances: Mechanism of phloem transport, source-sink relationship; factors affecting translocation	01 Sep to 15 Sep	Assignment-1
2	Topographic and biotic factors (species interaction). Adaptations of plants to water stress and salinity (morphological and anatomical features of hydrophytes, xerophytes and halophytes).	16 Sep to 30 Sep	Test-1
3	Photosynthesis: Significance; historical aspects; photosynthetic pigments; action spectra and enhancement effects, concept of two photosystems; Z-scheme; photo-phosphorylation; Calvin cycle; C4 pathway; CAM plants, photorespiration.	01 Oct to 15 Oct	Test- 2
3	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, Ecological succession. Ecosystem: Structure (components) and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow).	16 Oct to 31 Oct	Assignment-2

4	Respiration: ATP–the biological energy currency; aerobic and anaerobic respiration, Krebs cycle, electron transport mechanism (chemi-osmotic theory), redox - potential, oxidative phosphorylation, pentose phosphate pathway. Seed dormancy, plant movements, the concept of photoperiodism, physiology of flowering; florigen concept; physiology of senescence, fruit ripening.	01 Nov to 15 Nov	
4	Phyto-geography Environmental Pollution, Global Change: Greenhouse effect and greenhouse gases, impacts of global warming, carbon trading. Revision	16 Nov to 24 Nov	

Note:-

The teaching of topics to the students on the dates/days mentioned in the above lesson plan may not be exactly followed and may have little variations/fluctuations because of some unforeseen circumstances. For example: various Functions/Activities organized by the College (*Musical Meet, Blood Donation, Important Days Celebrations, Co-Curricular/Extra-curricular Activities etc.*), Response of Students in the Class, Request of Students for Repetition of some specific Topics, Unpredicted Leaves, Restricted Holidays etc.

Students can ask any query on my E-Mail ID also

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