

Govt. College, Ropar

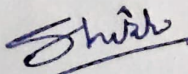
Department of Botany

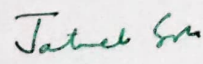
Class B.Sc. 5th Sem.

(Session 2021-2022)

| Week | Lesson scheduled |
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| 1 st | <ul style="list-style-type: none">➤ Plant-water relations: Importance of water to plant life; diffusion and osmosis; absorption, Transport of water in plants uptake and transpiration, Mechanism of stomatal opening and closing.➤ Class test |
| 2 nd | <ul style="list-style-type: none">➤ Mineral nutrition; Essential macro and micro-elements and their role, Mineral uptake: deficiency and toxicity symptoms, Transport of organic substances➤ Class test |
| 3 rd | <ul style="list-style-type: none">➤ Basics of enzymology |
| 4 th | <ul style="list-style-type: none">➤ Photosynthesis: Significance, historical aspects, photosynthetic pigments, action spectra and enhancement effect., Concept of two photosystems; Z-scheme; photophosphorylation➤ Class test |
| 5 th | <ul style="list-style-type: none">➤ Calvin cycle, C4 pathway, CAM, Photorespiration➤ Class test |
| 6 th | <ul style="list-style-type: none">➤ Respiration; aerobic and anaerobic, Kreb's cycle, Electron transport chain, Oxidative phosphorylation, Pentose phosphate pathway➤ Class test |
| 7 th | <ul style="list-style-type: none">➤ Nitrogen Fixation, Lipids➤ Revision |
| 8 th | MST |
| 9 th | MST |
| 10 th | <ul style="list-style-type: none">➤ Phases of growth kinetics, Plant hormones, Discovery, Discovery, bioassay, physiological effects and application of Auxin, Gibberellins➤ Class test |
| 11 th | <ul style="list-style-type: none">➤ Cytokinin |

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| | <ul style="list-style-type: none"> ➤ Abscissic acid, Ethylene, Photomorphogenesis, discovery, structure, physiological role and mechanism of action of phytochrome and cryptochrome ➤ Class test |
| 12 th | <ul style="list-style-type: none"> ➤ Photoperiodism, Vernalization, Biological clock, Physiology of senescence and abscission, Physiology of seed dormancy and seed germination; plant movements. ➤ Class test |
| 13 th | <ul style="list-style-type: none"> ➤ Tools and techniques of rDNA technology, Restriction enzymes, Gel electrophoresis, Southern blotting, Cloning vectors, PCR ➤ Class test |
| 14 th | <ul style="list-style-type: none"> ➤ Genomics and cDNA library, Method of gene transfer in plants, Physical, Chemical , Biological ➤ Class test |
| 15 th | <ul style="list-style-type: none"> ➤ Basic concept of plant tissue culture, Totipotency, Micropropagation, Anther culture & Embryo culture, Synthetic seeds, Somatic hybridization ➤ Class test |
| 16 th | <ul style="list-style-type: none"> ➤ Plant biotechnology and its application in human welfare with particular reference to industry, agriculturr and molecular farming ➤ Revision and class test |


 (SHIKHA CHAUDHARY)
 Head of Department


 Principal
 Govt. College, Ropar

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Department of Botany
Class B.Sc.6th Sem.
(Session 2021-2022)

| Week | Lesson scheduled |
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| 1 st | <ul style="list-style-type: none"> ➤ Concept of Ecology and its scope Environmental Factors: Climatic, Edaptic, topographic and biotic. Shelford's Law of tolerance. ➤ The importance and nature of plant products; Fibres: surface fibres (cotton), soft fibres (jute) hard fibres (coir) |
| 2 nd | <ul style="list-style-type: none"> ➤ Population ecology : Characteristics, Positive and negative interaction, growth forms, Carrying capacity, Ecotypes and Ecads. ➤ Forest Products: Wood properties, seasoning and importance, timber plants of India. |
| 3 rd | <ul style="list-style-type: none"> ➤ Community Ecology: Characteristics, Frequency, density and abundance, cover, life forms, ecological succession (Hydrosere, Xerosere), Gause Principle of Competitive Exclusion. ➤ Brief History of origin of food plants : Cultivation practices and recommended varieties of wheat, Rice, maize and Sugarcane with particular reference to Punjab. |
| 4 th | <ul style="list-style-type: none"> ➤ Structure and concept of ecosystem, ecological pyramids, food chain, food web ➤ Cultivation practices and use of Soybean, sunflower, mustard, groundnut and coconut. |
| 5 th | <ul style="list-style-type: none"> ➤ Ecological energetic and ecological productivity ➤ Vegetables and Fruits: Botanical name, family, season and area of cultivation of potato, tomato, brinjal, carrot, ladyfinger. |
| 6 th | <ul style="list-style-type: none"> ➤ Environmental issues: Brief idea of air, water, noise and soil pollution ➤ Vegetables and Fruits: Botanical name, family, season and area of cultivation of pea, mango, apple, banana, guava, kinnow and grapes |
| 7 th | <ul style="list-style-type: none"> ➤ Global warming, ozone depletion, international efforts for mitigation of global climate change. ➤ Spices: General account pertaining to botanical name, family and part used in case of clove, cardamom, black pepper, turmeric, cumin and ginger |
| 8 th | MST |
| 9 th | MST |
| 10 th | <ul style="list-style-type: none"> ➤ Biodiversity: Introduction and importance, Elements of biodiversity, Genetic, species and ecological diversity. ➤ Medicinal plants: General account pertaining to botanical name, family and part used and active principle in case of belladonna, neem, tulsi, stevia |
| 11 th | <ul style="list-style-type: none"> ➤ Conservation strategies, concept of hot spots, biomes ➤ Medicinal plants: General account pertaining to botanical name, family and part used and active principle in case of Rauwolfia, ashwagandha and glycyrrhiza ➤ Phytogeographic regions of India, Vegetation types (Forest, grasslands, ➤ Beverages : Cultivation practices, botanical name, family and active ingredients |

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| | of tea and coffee |
| 12 th | <ul style="list-style-type: none"> ➤ Vegetation types (deserts and wetlands) ➤ Narcotics: Cultivation practices, botanical name, family and active ingredients of Cannabis, tobacco and opium |
| 13 th | <ul style="list-style-type: none"> ➤ Ecological adaptations in xerophytes and hydrophytes ➤ Rubber: Major sources |
| 14 th | <ul style="list-style-type: none"> ➤ Ecological adaptations in halophytes ➤ Rubber: cultivation, processing and uses of para rubber. |
| 15 th | <ul style="list-style-type: none"> ➤ Biogeochemical cycles with particular reference to C, N and P |
| 16 th | <ul style="list-style-type: none"> ➤ Revision |

Shikha

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