

B.Sc. (BIOLOGY)

UGBY-01

Plant Diversity-I

Block-01

A

Diversity of Plants and Related Organisms

- Unit-01 Plants and Related Organisms and their Classification
- Unit-02 Introduction of Cyanobacteria, Fungi, Algae and Lower Plants

B

Comparative Morphology and Cell Structure in Algae

- Unit-03 Reproduction in Algae
- Unit-04 Classification of Algae
- Unit-05 Algae Habitats and Distributions
- Unit-06 Algae and Human Welfare

Block-II Fungi

- Unit-07 Fungal Habitats and Morphology
- Unit-08 Comparative Account of Reproduction in Fungi
- Unit-09 Role of Fungi in Human Welfare
- Unit-10 Lichens

Block-III Bryophytes

- Unit-11 Morphology and Anatomy of Bryophytes

Unit-12 Reproduction and Evolutionary Trends in Bryophytes

Unit-13 Importance and used of Bryophytes

Block-IV Pteridophytes

Unit-14 Comparative Morphology and Anatomy

Unit-15 Comparative Study of Reproduction in Pteridophytes

Unit-16 Lower Plants

UGBY-02

Plant Diversity-II

Block-01 Gymnosperms

- Unit-01 Introduction of Gymnosperms
- Unit-02 Cycadopsida: Cycas
- Unit-03 Coniteropsida: Pinus
- Unit-04 Gnetopsida: Ephedra and Gnetem
- Unit-05 Economic Importance of Gymnosperms

Block-II Flowering Plants

- Unit-06 Introduction to Angiosperms
- Unit-07 Tissues
- Unit-08 Root, Stem and Leaf
- Unit-09 Flowers, Fruits and Seeds Pollination Biology

Block-III

A Economic Botany

- Unit-10 Cereals and Millets
- Unit-11 Legumes (Pulses)
- Unit-12 Fruits and Nuts
- Unit-13 Vegetables
- Unit-14 Plants Oils and Fats
- Unit-15 Sugar and Starches

B Spices

Unit-16 Beverages

Unit-17 Medicinal and Aromatic Plants

Unit-18 Wood, Fibre and Related Products

Block-IV Families of Angiosperms

Unit-19 Picot Families-I- Introduction, Objectives, Ranunculaceae, Fabaceae, Myrtaceae, Apiaceae

Unit-20 Picot Families-II- Introduction, Objectives, Rubiaceae, Asteraceae, Scitaceae, Asclepiadaceae, Solanaceae,

Unit-21 Acanthaceae, Lamiaceae, Amaranthaceae, Santalaceae, Euphorbiaceae, Musaceae, Monocot Families- Introduction, Objectives, Liliaceae, Arecaceae, Poaceae

Unit-22 Some Unusual Plants- Introduction, Objectives, Carnivorous Plants with Unusual modes of Nutrition, Saprophytic Plants, Parasitic Plants, Plant Curios, Seed and Fruits, Special Monocots

UGBY-03

Plant Diversity Lab

Block-01 Practical Based On

Unit-01 Cyanobacteria

Unit-02 Algae

Unit-03 Fungi

Unit-04 Lower Plants

Block-02

A Practical Based On

Unit-05 Higher Plants

Unit-06 Gymnosperm

Unit-07 Anatomy

B Practical Based On

Unit-08 Higher Plants Economic Botany

C

Unit-09 Higher Plants Taxonomy and Economic Botany

D

Unit-10 Jay and Glossary- An Identification key, Glossary of Taxonomic Terms

UGBY-05

Cell Biology

Block-01 Introduction to Cell Biology

- Unit-01 Introduction to the cell
- Unit-02 Functional to the cell
- Unit-03 Molecules of the cell
- Unit-04 Macromolecules of the cell

Block-02 Cell membranes and Enzymes

- Unit-05 Supra-molecular Structures and Cell Membranes
- Unit-06 Membrane Transport Processes
- Unit-07 Transport Molecules and Proton Pumps
- Unit-08 Enzymes: Specificity and Mechanism of Action
- Unit-09 Enzymes: Regulation and Control

Block-III Metabolism and Communication in Cells

- Unit-10 Energy Releasing Pathways
- Unit-11 Biosynthesis
- Unit-12 Nucleus: Structure and Function
- Unit-13 Protein Biosynthesis
- Unit-14 Chemical Signaling Between Cells

Block-IV Cell Division, Cell movement & Differentiated Cell Types

- Unit-15 Cell Cycle and Mitosis

Unit-16 Meioses and Cell Division

Unit-17 Cell Adhesion, Cell Movement and Extracellular Matrix

Unit-18 Differentiated Animal Cell Types

Unit-19 Differentiated Plant Cell Types

UGBY-06

Plant Ecology

Block-01 Environment and its Components

- Unit-01 Ecology and Ecosystem
- Unit-02 Environmental Components: Light, Temperature and Atmosphere
- Unit-03 Environmental Components: Water
- Unit-04 Environmental Components: Soil

Block-II Ecosystem: Functioning Types

- Unit-05 Nutrient Cycling
- Unit-06 Types of Ecosystems: Terrestrial Ecosystems
- Unit-07 Types of Ecosystems: Aquatic Ecosystems

Block-III Community Ecology

- Unit-08 Nature and Structure of Community
- Unit-09 Community Change
- Unit-10 Community Organization and Interaction among Organisms
- Unit-11 Population Parameters and Regulation

Block-IV Humans and Ecology

- Unit-12 An Overview of human Evaluation and Human Population
- Unit-13 Ecosystem Degradation and the wildlife
- Unit-14 Environmental Pollution: Causes, Consequences and Control

UGBY-07

Genetics

Block-01 Heredity and Phenotypes

- Unit-01 Mendel's Law of Inheritance
- Unit-02 Extensions and Modifications of Medallion
- Unit-03 Sex Determination
- Unit-04 Six Linkage and Dosage Compensation
- Unit-05 Developmental Basis of Sex
- Unit-06 linkage Crossing over and Chromosome Mapping

Block-II The Physical Basis of Heredity

- Unit-07 Extra Nuclear inheritance
- Unit-08 Human Chromosomes
- Unit-09 Structural Abnormalities in Chromosomes and their Effect
- Unit-10 Numerical Abnormalities in Chromosomes and their Effect
- Unit-11 Genetics of Bacteria and becteriophages

Block-III Gene Structure and Function

- Unit-12 Gene fine Structure
- Unit-13 Regulation of Gene Expression in Prokoryote
- Unit-14 Fegulation of Gene Expression and Development in Eukaryotes
- Unit-15 Mutations and Mutagenesis

Unit-16 Carcinogenesis and Teratogenesis

Unit-17 Immune genetics

Block-IV Population and Applied Genetics

Unit-18 Genetics of Blood

Unit-19 Quantitative Traits and Genetics in Twins

Unit-20 Behavioral Genetics

Unit-21 Genetics and Human Welfare

Unit-22 Genetics in Agriculture and Plant Improvement

UGBY-08

Plant Physiology

Block-01 Animal Physiology-I

- Unit-01 Nutrition Feeding Digestion
- Unit-02 Respiration
- Unit-03 Circulation
- Unit-04 Excretion
- Unit-05 Osmotic and Ionic Regulation

Block-II Animal Physiology-II

- Unit-06 Movements
- Unit-07 Temperature Relations in Animals
- Unit-08 Reproduction
- Unit-09 Communication I & II

Block-III Plant Physiology

- Unit-10 Plant Water Relations
- Unit-11 Mineral Nutrition
- Unit-12 Photosynthesis
- Unit-13 Transport in the Phloem

Block-IV Plant Physiology-II

- Unit-14 Inorganic Nitrogen and Sulphur Metabolism
- Unit-15 Plant Hormones

Unit-16 Development and Differentiation

Unit-17 Responses of Plant of Stress

UGBY-09

Development Biology

Block-01 Plant Development-I

- Unit-01 Anther and Ovule
- Unit-02 Gametogenesis
- Unit-03 Pollination and Fertilization
- Unit-04 Endosperm
- Unit-05 Embryogenesis
- Unit-06 Seed and Fruit

Block-II Plant Development-II

- Unit-07 Root and Shoot Morphogenesis
- Unit-08 Effect of Plant Growth Regulators on Development
- Unit-09 Apical Dominance
- Unit-10 Secondary Growth
- Unit-11 Plant Tissue and Organ Culture
- Unit-12 Current Trends in Developmental Studies

Block-III Animal Development-I

- Unit-13 Beginning of a New Organism
- Unit-14 Cleavage and Gastrulation
- Unit-15 Morphogenesis and Tissue Organization
- Unit-16 Mechanisms of Cell Interaction

Unit-17 Organogenesis of Eye and Limb

Block-IV Animal Development-II

Unit-18 Metamorphosis

Unit-19 Regeneration

Unit-20 Growth, Aging, Cancer

Unit-21 Human Development

UGBY-10

Taxonomy and Evolution

Block-01 History and Concept of Taxonomy

- Unit-01 Taxonomy Concepts and Their Development
- Unit-02 System of Classification: Plants
- Unit-03 System of Classification: Animals
- Unit-04 Binomial Nomenclature

Block-II Tools and Trends in Taxonomy

- Unit-05 Tools of a Taxo Monist I & II
- Unit-06 Modern Trends in Plant Taxonomy
- Unit-07 Modern Trends in Animal Taxonomy

Block-III Evolution -I

- Unit-08 Concept of Organic Evolution
- Unit-09 Evidence for Evolution
- Unit-10 The process of Evolutionary Change

Block-IV Evolution -II

- Unit-11 Natural Selection in Action
- Unit-12 Speciation
- Unit-13 Human Evolution – I&II

UGBY-11

Biochemistry

Block-01 Biomolecules-I

Unit-01 Cell Structure and Function

Unit-02 Carbohydrates

Unit-03 Lipids

Unit-04 Nucleic Acids

Block-II Biomolecules-II

Unit-05 Proteins

Unit-06 Enzymes

Unit-07 Vitamins Coenzymes and Miwrals

Block-III Bioenergetics and Metabolism

Unit-08 Bioenergetics

Unit-09 Metabolism-I & II

Unit-10 Photosynthesis

Block-IV Gene Expression

Unit-11 Replication and Transcription

Unit-12 Protein Biosynthesis

Unit-13 Biotechnology

Unit-14 Immunology

UGBY-12

Mathematical Methods

Block-I Algebra and Geometry

Unit-01	Sets and Functions
Unit-02	Graphs and Functions
Unit-03	Elementary Algebra
Unit-04	Coordinate Geometry
Unit-05	Vectors

Block-II Calculus

Unit-06	Differential Calculus
Unit-07	Applications of Differential Calculus
Unit-08	The Integration
Unit-09	Integration of Elementary Functions
Unit-10	Differential Equations

Block-III Probability Distribution

Unit-11	Statistics
Unit-12	Probability
Unit-13	Discrete Probability Distribution
Unit-14	Continuous Probability Distribution

Block-V Statistical Inference

Unit-15	Sampling (Statistical data Sampling)
Unit-16	Hypothesis Tests
Unit-17	Correlation and Regression

UGBY (L)-I
Laboratory Work-I

UGBY (L)-II
Laboratory Work-II