

UGZY-01
Animal Diversity-I

Block-I	Diversity of Animal Life-I (Organisation)
Unit-01	Five Kingdom Classification
Unit-02	The Protozoans
Unit-03	The Metazoa- Origin and Evolution
Block-II	Diversity of Animal Life-II (Classification)
Unit-04	Classification of Multicultural Animals-I
Unit-05	Classification of Multicultural Animals-II & III
Unit-06	Skeleton of Polymorphism
Block-III	Comparative Forms and Functions
Unit-07	Locomotion
Unit-08	Nutrition, Osmoregulation and Excretion
Unit-09	Respiratory and Circulatory System
Unit-10	Nervous System and Sense Organs
Unit-11	Endocrine System
Unit-12	Reproduction System
Block-IV	Adaption and Behaviour Pattern
Unit-13	Harmful Non- Chordates
Unit-14	Beneficial Non- Chordates

UGZY-02
Animal Diversity-II

Block-I	Diversity in Chordates
Unit-01	Introduction to Chordates
Unit-02	Agnatha, Fishes and Amphibians
Unit-03	Reptiles and Birds
Unit-04	Mammals
Block-II	Function Anatomy of Chordates-II
Unit-04	Integument
Unit-05	Digestive System
Unit-06	Respiratory System
Unit-07	Circulatory System
Block-III	Functions Anatomy of Chordates-II
Unit-08	Urinogenital System
Unit-09	Nervous System and Sense Organs
Unit-10	Skeletal System
Unit-11	Endocrine System
Block-IV	Adaptations & Behavioural Patterns
Unit-12	Introduction to Animal Behaviour
Unit-13	Development of Behaviour
Unit-14	Organisation of Behaviour
Unit-15	Adaptive Behaviour

UGZY-03

Animal Diversity Lab

Block-I	
Unit-01	Non- Chordates (Practical Based On UGZY-01&02)
Block-II	
Unit-02	Chordates (Practical Based On UGZY-01&02)

UGZY-05
Cell Biology

Block-I	Introduction to Cell Biology
Unit-01	Introduction to the Cell
Unit-02	Functional Ultra-structure of the cell
Unit-03	Molecules of the Cell
Unit-04	Macro-molecules of the cell
Block-II	Cell Membranes and Enzymes
Unit-05	Supramolecular Structure and Cell Membranes
Unit-06	Membrane Transport Processes
Unit-07	Transport Molecules and Processes
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 Signalling Between Cells
Block-IV	Cell Division, Cell movement & Differentiated Cell Types
Unit-15	Cell Cycle and Mitosis
Unit-16	Meiosis Cell Division
Unit-17	Cell Adhesion, Cell Movement and Extracellular Matrix
Unit-18	Differential Animal Cell Types
Unit-19	Differential Plant Cell Types

UGZY-06
Animal Ecology

Block-I	Environment and its Components
Unit-01	Ecology and Ecosystem
Unit-02	Environment Components: Light, Temperature and Atmosphere
Unit-03	Environment Components: Water
Unit-04	Environment Components: Soil
Block-II	Ecosystem: Functioning Types
Unit-05	Nutrient Cycling
Unit-06	Types of Ecosystems: Terrestrial Ecosystems
Unit-07	Types of Ecosystem: 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 Evolution and Human Population
Unit-13	Ecosystem Degradation and the wildlife
Unit-14	Environmental Pollution: Causes, Consequences and Control

UGZY-07
Genetics

Block-I	Heredity and Phenotypes
Unit-01	Mendel's Laws of Inheritance
Unit-02	Extensions and Modifications of Mendelian Genetic Analysis
Unit-03	Sex Determination
Unit-04	Sex 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	Structure Abnormalities in Chromosomes and their Effects
Unit-10	Numerical Abnormalities in Chromosomes and their Effects
Unit-11	The Nature and Structure of Genetic
Unit-12	Genetics of Bacteria and Bacteriophages
Block-III	Gene Structure and Function
Unit-13	Gene Fine Structure
Unit-14	Regulation of Gene Expression in Prokaryote
Unit-15	Regulation of Gene Expression and Development in Eukaryotes
Unit-16	Mutations and Mutaenesis
Unit-17	Carcinogenesis and Teratogenesis
Unit-18	Immunogenetics
Block-IV	Population and Applied Genetics
Unit-19	Genetics of Blood
Unit-20	Behaviour of Genes in population
Unit-21	Quantitative Traits and Genetics in Twins
Unit-22	Behavioral Genetics
Unit-23	Genetics and Human Welfare
Unit-24	Genetics in Agriculture and Plant Improvement

UGZY-08
Animal Physiology

Block-I	Animal Physiology-I
Unit-01	Nutrition Feeding Digestion
Unit-02	Respiration
Unit-03	Circulation
Unit-04	Osmotic and Ionic Regulation
Block-II	Animal Physiology-II
Unit-05	Movements
Unit-06	Temperature Relations in Animals
Unit-07	Reproduction
Unit-08	Communication I & II
Block-III	Plant Physiology- II
Unit-09	Plant Water Relations
Unit-10	Mineral Nutrition
Unit-11	Photosynthesis
Unit-12	Transport in the Phloem
Block-IV	Plant Physiology- II
Unit-13	Inorganic Nitrogen and Sulphur Metabolism
Unit-14	Plant Hormones
Unit-15	Development and Differentiation
Unit-16	Responses of Plants to Stress

UGZY-09
Development Biology

Block-I	Plant Development -I
Unit-01	Anther and Ovule
Unit-02	Gametogenesis
Unit-03	Pollination and Fertilization
Unit-04	Endosperm
Unit-05	Embry Ogenesis
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 Tissues 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

UGZY-10
Taxonomy and Evolution

Block-I 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 Taxonomist- 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

UGZY-11(N)

Statistical Methods

BLOCK – I . Data Collection and Its Representation

Unit-I- Data Collection and Tabulation :

Meanings, Definitions and Applications of Statistics, Measurements and Scale, Measurements of qualitative data, Methods of data collection, Types of data.

Unit-II- Representation of Data- I (Diagrammatical representation):

Frequency distribution, Tabulation of data, Diagrammatical Representation of data, Bar diagram, Multiple bar diagram, Divided bar diagram, Percentage bar diagram, Pie chart, Pictogram, leaf chart,

Unit-II- Representation of Data- I (Graphical representation):

Graphical representation of frequency distribution, Histogram, Frequency polygon, Frequency curve, Ogive.

BLOCK – II . Measures of Central Tendency and Dispersion

Unit-I- Measures of Central Tendency :

Types of measures of central tendency, Arithmetic mean, Fundamental Theorems on Arithmetic mean, Geometric mean, Harmonic mean, Median, Mode, Percentiles, Deciles, and Quartiles.

Unit-II- Measures of Dispersion :

Types of measures of Dispersion, Range, Mean Deviation, Variance and Standard deviation, Effect of change of origin and scale, Relationship between measures of central tendency and measures of dispersion, Coefficient of variation.

BLOCK – II . Moments, Skewness and Kurtosis

Unit-I- Moments, Raw Moments and Central Moments :

Definition of moments, raw moments for ungrouped data, raw moments for grouped data, Central moments, Factorial moments, Interrelationship between various moments, effect of change of origin and scale on moments, Charlier's checks, Sheppard's correction for moments.

Unit-II- Skewness and Kurtosis :

Definition of skewness, Measures of skewness, Pearson's coefficient, Bowley's coefficients, Kurtosis, Measures of Kurtosis, effect of change of origin and scale.

UGZY-11(O)
Biochemistry

Block-I	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 Minerals
Block-III	Bioenergetics and Metabolism
Unit-08	Bioenergetics
Unit-09	Metabolism –I&II
Unit-10	Metabolism Regulation
Unit-11	Photosynthesis
Block-IV	Gene Expression
Unit-12	Replication and Transcription
Unit-13	Protein Biosynthesis
Unit-14	Biotechnology
Unit-15	Immunology

UGZY-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

UGZY (L)-I
Laboratory Work-I

UGZY (L)-II
Laboratory Work-II