

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. I

Semester: I

Subject: Zoology

Course Code – B23-ZOO-101

Paper: Animal Diversity of Non-Chordates

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
August 2026	Phylum Protozoa: General characters and classification up to class level Type study of Plasmodium Phylum Porifera: General characters and classification up to class level, Type study of Sycon Practical	
September 2026	Phylum – Coelentrata: General characters and classification up to class level Type Study of Obelia Phylum – Platyhelminthes and Aschelminthes: General characters and classification up to class level, Type study of Liver Fluke, Fasciola hepatica Practical	1 st assignment
October 2026	Phylum – Annelida: General characters and classification up to class level, Type study of Earthworm, Pheretima posthuma (Habitat, habits, metamerism, digestive System, circulatory system, nervous system, reproductive system) Phylum – Arthropoda: General characters and classification up to class level, Type study of Cockroach, Periplaneta americana (Habitat, habits, external morphology, digestive system, respiratory system, excretory system, reproductive system)	Unit-IIInd Test

	Practical	
November 2026	Phylum - Mollusca: General characters and classification up to class level, Type study of Pila Phylum – Echinodermata: General characters and classification up to class level, Type study of Asterias (Sea Star) (Habitat, habits, external morphology, water vascular system, Circulatory System) Phylum Hemichordata: General characters of Hemichordates with examples Practical	

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Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. I

Semester: I

Subject: Zoology

Course Code – B23-ZOO-104

Paper: Basics of Zoology - I (MDC)

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
August 2026	Zoology: Definition and scope, introduction to Animal Kingdom, animal characters Non-Chordates and Invertebrates with examples, Invertebrate Phyla, Introduction to basic characters of animal with special reference to the non chordates; Biodiversity: Introduction and Scope; General characters of Protozoa and Porifera; Study of Amoeba and sponges with special reference to its structure and economic importance	
September 2026	General characters of Coelentrata and Annelida; Ecological importance of corals; Morphology of earthworm and its ecological role; Economic importance of Leech	1 st assignment
October 2026	General characters of Arthropoda and Mollusca; Study of basic characters of insects and snails; Insects as pest: Grasshopper, Economic importance of Honey Bee; Snails as pest in Paddy fields	Test
November 2026	General characters of Echinodermata; Study of basic characters of Star fish with reference to its role in ecosystem; Economic importance of Star Fish	

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. I

Semester: II

Subject: Zoology

Course Code – B23-ZOO-201

Paper: Animal Diversity of Chordates

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
January 2027	Unit – I, Chordates: Salient features of chordates; Principles of classification; Protochordates: Urochordata: Systematic position, distribution, ecology, morphology and affinities Urochordata: Type Study of Herdmania Practical	
February 2027	Unit – II, Pisces: General characters and classification up to classes with examples emphasizing their biodiversity, Scales & Fins, Type study of Labeo Practical	Unit-1 st assignment
March 2027	Unit – III, Amphibia: General characters and Classification upto class level; Type study of frog, Parental Care and Neoteny in Amphibia Reptilia: General characters and Classification upto classes, Practical	Unit-II Test
April 2027	Aves: General characters and Classifications upto classes. Flight/Aerial adaptation in birds, Archaeopteryx as missing link Mammals: General characters and classification up to classes; Type study of Rat Practical	

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B.A./ B.Com. I

Semester: II

Subject: Zoology

Course Code – B23-ZOO-204

Paper: Basics of Zoology - II (MDC)

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
January 2027	Unit – I, Basics of Chordates: Define and Salient features of chordates, Difference between non chordates and chordates. Characters of protochordates Practical	
February 2027	Unit – II, Pisces (Fishes): Characteristic features of freshwater and marine fishes, Edible fishes of India, Composite fish culture. Class Amphibia: Features of amphibians, Parental care in amphibians, Role of amphibians in ecosystem, Identification of turtles and tortoise, Frog and Toad Practical	Unit-1 st assignment
March 2027	Unit – III, Class Reptilia: Features of Reptiles, Common reptiles of India, Identification of Poisonous and non-poisonous snakes, Difference between crocodile and Gharial Practical	Unit-II Test
April 2027	Unit – IV, Class Aves: Characteristic features of birds, Common birds of India, Flight adaptations in birds, Commercial uses of birds, Role of birds in agriculture. Class Mammals: Characters and economic importance of mammals Practical	

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. II

Semester: III

Subject: Zoology

Course Code – B23-ZOO-301

Paper: Cell Biology and Animal Genetics

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
August 2026	General structure of animal cell. Plasma Membrane: Fluid mosaic model, various modes of transport across the membrane, mechanism of active and passive transport, endocytosis and exocytosis. Endoplasmic reticulum (ER): types and functions. Golgi complex: Structure, associated enzymes and role of golgi-complex in animal cell	
September 2026	Ribosomes: Types, biogenesis and role in protein synthesis. Lysosomes: Structure, enzymes and their role; polymorphism Mitochondria: Structure, Mitochondria as semiautonomous body, biogenesis, functions of mitochondria. Cilia and Flagella: Structure and Functions Ultrastructure and functions of Nucleus: Nuclear membrane, nuclear lamina, nucleolus, fine structure of chromosomes, nucleosome concept and role of histones, euchromatin and heterochromatin	1 st assignment
October 2026	Introduction and Mendel's Laws of Inheritance, Linkage and recombination: Cell Cycle, crossing-over and chiasma formation; gene mapping. Sex determination and its mechanism: male and female heterozygous systems, genetic balance system; role of Y-chromosome, male haploidy, cytoplasmic and environmental factors, role of hormones in sex	Unit-II Ind Test

	determination. Sex linked inheritance: Haemophilia and colour blindness in man, eye colour in Drosophila, Non-disjunction of sex-chromosome in Drosophila, Sex-linked and sex-influenced inheritance Extra chromosomal and cytoplasmic inheritance: Kappa particles in Paramecium, Shell coiling in snails, Milk factor in mice	
November 2026	Multiple allelism: Eye colour in Drosophila; A, B, O blood group in man. Human genetics: Human karyotype, Chromosomal abnormalities involving autosomes and sex chromosomes, monozygotic and dizygotic twins. Inborn errors of metabolism (Alcaptonuria, Phenylketonuria, Albinism, sickle-cell anaemia). Applied genetics: Genetic counseling, pre-natal diagnosis, DNA-finger printing, transgenic animals	

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. II

Semester: III

Subject: Zoology

Course Code – B23-ZOO-303

Paper: Basics of Zoology - III (MDC)

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
August 2026	Humans Skeleton and bones: Characteristics (axial and appendicular skeleton), Joints, cartilage and ligaments, interaction between skeletal muscles and nerves. ABO and RH system in humans, methods of determination, importance and dangers of blood transfusion.	
September 2026	Human cell and chromosomes: Cell as unit of life, morphology and functional elements of human chromosome Sex Determination: Definition, different types and scope.	Unit-1 st assignment
October 2026	Respiration in humans: Anatomy and physiology of respiration, factors affecting change of gases and diffusing capacity. Introduction to Dental Formula, types and development of tooth.	Test
November 2026	Darwinism, species and population: Concept of evolution, theory of Darwinism, Neo-Darwinism, Genetic drift, Hardy Weinberg Law Human Evolution: Origin and evolution, adaptive evolution	

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. II

Semester: IV

Subject: Zoology

Course Code – B23-ZOO-401

Paper: Biomolecules and Mammalian Physiology

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
January 2027	Unit – I, Introduction, classification, structure, function and general properties of proteins, carbohydrates and lipids. Nomenclature, classification and mechanisms of enzyme action; Enzyme Kinetics, factors affecting enzyme activity, inhibition of enzymes Transport through biomembranes (Active and Passive), osmotic pressure, hydrogen ion concentration and buffers Practical	
February 2027	Unit – II, Nutrition: Nutritional components: Carbohydrates, fats, lipids, Vitamins and Minerals; Types of nutrition & feeding, Digestion of lipids, proteins, carbohydrates & nucleic acids; symbiotic digestion, lactose intolerance, Physico-chemical mechanism of Absorption of nutrients & assimilation; control of secretion of digestive juices. Muscles: Types of muscles, ultra-structure of skeletal muscle, neuromuscular junction. Bio-chemical and physical events during muscle contraction, single muscle twitch, tetanus, muscle fatigue, muscle tone, oxygen debt., Cori's cycle, single unit smooth muscles, their physical and functional properties. Practical	Unit-1 st assignment
March 2027	UNIT- III, Circulation: Origin, conduction and regulation of heart beat; cardiac cycle electrocardiogram, cardiac output, fluid pressure and flow pressure in closed and open circulatory system; Composition and functions of blood & lymph; Mechanism of coagulation of blood, coagulation factors; anticoagulants, haemopoiesis. Respiration: Exchange of respiratory gases, transport of gases, lung air volumes, oxygen dissociation curve of haemoglobin, Bohr's effect, Hamburger's phenomenon (Chloride shift), control / regulation of respiration (peripheral reflexes, chemical control and Higher centres),	Unit-IInd Test

	Myoglobin. Excretion: Patterns of excretory products viz. Amonotelic, ureotlic uricotelic, ornithine cycle (Kreb's – Henseleit cycle) for urea formation in liver; Urine formation, composition of Urine, counter-current mechanism of urine formation, osmoregulation, micturition. Practical	
April 2027	Unit – IV, Neural Integration: Nature, origin and propagation of nerve impulse alongwith medullated & non-medullated nerve fibre, conduction of nerve impulse across synapse, synaptic delay and synaptic fatigue, Neurotransmitter. Chemical integration of Endocrinology: Structure, chemical nature and mechanism of peptide and steroid hormone action; physiology of hypothalamus, pituitary, thyroid, parathyroid, adrenal, pancreas and gonads, Hormonal disorders. Reproduction: Spermatogenesis, Capacitation of spermatozoa, oogenesis, ovulation, formation of corpus luteum, oestrous-anoestrous cycle, Menstrual cycle in human, fertilization, implantation and gestation, parturition Practical	

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. III

Semester: V

Subject: Zoology

Course Code – B23-ZOO-501

Paper: Ecology and Environment

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
August 2026	Basic concepts of ecology: Definition, significance. Concepts of habitat and ecological Niche. Ecosystem: Concept, components, properties and functions; Ecological energetics and energy flow models, food chain, food web, trophic structure; ecological pyramids, concept of productivity	
September 2026	Factors affecting environment: Abiotic factors (light-intensity, quality and duration), temperature, humidity, wind, Rainfall, topography; edaphic factors; Biotic factors. Introduction to major ecosystems of the world. Biogeochemical cycles: Concept, reservoir pool, gaseous cycles and sedimentary cycles. Community Ecology: Characteristics, Compo Factors affecting environment: Abiotic factors (light-intensity, quality and duration), temperature, humidity, wind, Rainfall, topography; edaphic factors; Biotic factors. Introduction to major ecosystems of the world. Biogeochemical cycles: Concept, reservoir pool, gaseous cycles and sedimentary cycles. Community Ecology: Characteristics, Composition, structure, origin and development of a community Ecological Succession. sition, structure, origin and development of a community Ecological Succession.	1 st assignment
October 2026	Population: Growth and regulation. Population interactions: Competition, predation, parasitism,	Test

	commensalisms and mutualism. Concept of biodiversity and conservation of natural resources.	
November 2026	Climate change: Global warming, Greenhouse Effect, Ozone Depletion, Sustainable Development. Natural Recourses: Types, Uses and conservation. Environmental Pollution: Air, water	

INDIRA GANDHI NATIONAL COLLEGE LADWA

Lesson Plan

Name of Teacher: Mr. Sachin

Class: B. Sc. III

Semester: VI

Subject: Zoology

Course Code – B23-ZOO-601

Paper: Developmental Biology & Evolution

Session: 2026-2027

Month	Topic/Chapter to be covered	Assignment/test
January 2027	Human fertilization-Generalized structure of mammalian ovum & sperm, spermatogenesis and Oogenesis, fertilization, parthenogenesis, different types of eggs and patterns of cleavage. Blastulation of Frog and Chick- Process of blastulation and fate-map construction in frog and chick. Practical	1 st assignment
February 2027	Gastrulation in Frog and Chick- Gastrulation in frog and chick upto the formation of three germinal layers. Elementary knowledge of primary organizers and extra embryonic membranes. Placenta: types; structure and function of placenta in humans. Concepts of competence, determination and differentiation. Concept of regeneration. Practical	Test
March 2027	Origin of life. Concept and evidences of organic evolution. Theories of organic evolution. Concept of micro, macro-and mega-evolution. Evidences of Evolution: Fossil record- types of fossils, geological time scale, Natural selection. Isolating mechanisms, modes of speciation—allopatric, sympatric, Adaptive radiation Practical	
April 2027	Population genetics: Hardy-Weinberg Law Concept of species: Different species concept and speciation. Genetic Drift (mechanism, founder's effect, bottleneck phenomenon; Role of Migration and Mutation in changing allele frequencies Phylogeny of horse, Evolution of man. Practical	