

Lesson Plan

Academic Session- **2021-22** Subject- **Zoology**

Class - **B. Sc. – 1st Semester** Assistant Professor : Dr. Pradeep Kumar

OCTOBER 2021	
	<p>General characters and classification of Protozoa up to order level; Biodiversity and economic importance of Protozoa.</p> <p>Type study of <i>Plasmodium</i>, <i>Entamoeba</i>, <i>Leishmania</i> and <i>Giardia</i> : Life history, mode of infection and pathogenicity</p> <p>General characters and classification of Porifera up to order level; Biodiversity and economic importance of Porifera</p>
NOVEMBER 2021	
	<p>Type study of <i>Sycon</i> : <i>Habit</i>, <i>Habitat</i>, <i>Distribution</i>, <i>Different body parts with their functions</i>; Different types of Canal systems and Spicules in sponges.</p> <p>General characters and classification of Coelenterata up to order level; Biodiversity and economic importance of Coelenterata.</p> <p>Type Study – <i>Obelia</i>, Corals and coral reefs, Polymorphism in Siphonophores.</p> <p>General characters and classification of Helminths up to order level; Biodiversity and economic importance of Helminths.</p> <p>Type study - <i>Fasciola hepatica</i>; Helminths parasites: Brief account of life history, mode of infection and pathogenesis of <i>Schistosoma</i>, <i>Ancylostoma</i>, <i>Trichinella</i>, <i>Wuchereria</i> and <i>Oxyuris</i>.</p>
DECEMBER 2021	
	<p>Ultrastructure of different cell organelles of animal cell; Plasma Membrane: Fluid mosaic model, various modes of transport across the membrane, mechanism of active and passive transport, endocytosis and exocytosis.</p> <p>Endoplasmic reticulum (ER): types, role of ER in protein synthesis and transportation in animal cell.</p> <p>Goigi complex: Structure, Associated enzymes and role of Golgi-complex in animal cell.</p> <p>Ribosomes: Types, biogenesis and role in protein synthesis; Lysosomes: Structure, enzyme and their role; polymorphism.</p> <p>Cytoskeleton: Microtubules, microfilaments, centriole and basal body, Cilia and Flagella.</p>
JANUARY 2022	
	<p>Ultrastructure and functions of Nucleus: Nuclear membrane, nuclear lamina, nucleolus, fine structure of chromosomes, nucleosome concept and role of histones.</p> <p>Euchromatin and heterochromatin, lampbrush chromosomes and polytene chromosomes.</p> <p>Mitosis and Meiosis (Cell reproduction). Brief account of causes of cancer. An elementary idea of cellular basis of Immunity.</p> <p>Revision</p>

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Academic Session- **2021-22** Subject- **Zoology**
Class - **B. Sc. - 3rd Semester**

Assistant Professor : Dr. Pradeep Kumar

OCTOBER 2021	
	Principles of classification; Origin and Evolutionary tree of Chordates; Role of amnion in evolution; Salient features of chordates. General characters and classification of phyla upto orders with examples. Functional morphology of the types with examples emphasizing Chordate biodiversity, Chordate's economic importance and conservation measures where required.
NOVEMBER 2021	
	Protochordates : Systematic position, distribution, ecology, morphology and affinities. General characters and classification of phyla upto orders with examples emphasizing their biodiversity, economic importance and conservation measures where required. Urochordata: <i>Herdmania</i> – type study Cephalochordata; <i>Amphioxus</i> – type study. Cyclostomes: Classification and ecological significance Type study of <i>Petromyzon</i> . Cyclostomes: General characters and classification of all phyla upto orders with examples emphasizing their biodiversity, economic importance and conservation measures where required.
DECEMBER 2021	
	Pisces: Scales & Fins, Parental care in fishes, fish migration. Types study of Labeo. Introduction, Classification, Structure, function and general properties of carbohydrates and lipids. Introduction, Classification, Structure, function and general properties of proteins; Nomenclature, Classification and mechanisms of enzyme action. Transport through biomembranes (Active and Passive), buffers.
JANUARY 2022	
	Nutrition: Nutritional components; Carbohydrates, fats, lipids, Vitamins and Minerals, Types of nutrition & feeding, Digestion of dietary constituents, viz. lipids, proteins, carbohydrates & nucleic acids; symbiotic digestion. Absorption of nutrients & assimilation; control of enzyme secretion. PAPER I : Unit test – 1, Unit test – 2, Unit test – 3, Unit test – 4 PAPER II : Unit test – 1, Unit test – 2, Unit test – 3, Unit test – 4 Revision

Lesson Plan

Academic Session- **2021-22** Subject- **Zoology**

Class - **B. Sc. - 5th Semester**

Assistant Professor : Dr. Pradeep Kumar

OCTOBER 2021	
	Introduction to world fisheries: Production, utilization and demand. Fresh Water fishes of India: River system, reservoir, pond, tank fisheries. Captive and culture fisheries, cold water fisheries. Fishing crafts and gears. Fin fishes, Crustaceans, Molluscs and their culture. Seed production: Natural seed resources – its assessment, collection, Hatchery production.
NOVEMBER 2021	
	Nutrition: Sources of food (Natural, Artificial) and feed composition (Calorie and Chemical ingredients). Field Culture: Ponds-running water, recycled water, cage, culture; poly culture. Culture technology: Biotechnology, gene manipulation and cryopreservation of gametes.
DECEMBER 2021	
	Basic concepts of ecology: Definition, significance. Concepts of habitat and ecological niche. Factors affecting environment: Abiotic factors (light-intensity, quality and duration), temperature, humidity, topography; edaphic factors; biotic factors. Ecosystem: Concept, components, properties and functions;
JANUARY 2022	
	Ecological energetics and energy flow-food chain, food web, trophic structure; ecological pyramids concept of productivity. Biogeochemical cycles: Concept, reservoir pool, gaseous cycles and sedimentary cycles. Population: Growth and regulation. Concept and evidences of organic evolution. Theories of organic evolution. PAPER I : Unit test – 1, Unit test – 2, Unit test – 3, Unit test – 4 PAPER II : Unit test – 1, Unit test – 2, Unit test – 3, Unit test – 4 Revision