

ZOOLOGY

Non-chordata and Chordata:

Non-Chordata:

1. Protozoa-Classification of protozoa (Honigberg), Locomotion in Protozoa, Nutrition in protozoa, Reproduction in protozoa, Diseases of Protozoa, Economic importance of Protozoa.
2. Porifera: Canal system in porifera, skeleton in porifera, Reproduction in sponges.
3. Coelenterata : Polymorphism in coelenteratas, Metagenesis coral formation, Etenophora.
4. Helminths: Common Helminthic parasites of Man – Taenia solium, Schistosoma sp., Ascaris, Ancylostoma, Oxyuris Loa, Trichinella, Strongyloides – their life cycles, Parasitism.
5. Annelida: Excretory system in Annelida, Coelome formation.
6. Arthropoda: Mouthparts of Insects, crustacean larvae, parasitism in crustacea, useful and harmful insects, Metamorphosis in insects. Apiculture and sericulture in India.
7. Mollusca: Respiration in Mollusca, Torsion and Detorsion, pearl formation and Pearl industry.
8. Echinodermata: Echinoderm larvae.

CHORDATA:

Origin of Chordata, phylogeny and affinities of Hemichordata Retrogressive metamorphosis, Comparative account of Respiratory, Circulatory, Excretory and Reproductive systems of Vertebrates. Pisciculture in India, Common edible fishes of A.P., Origin and classification of Amphibia, Paedogenesis.

Temporal fossae in Reptilia, Important snakes of India, Dinosaurs.

Adaptations of flight in birds, Migration of birds. Poultry in India.

Adaptive radiation in Mammals, Aquatic Mammals, useful Mammals, Dentition in Mammals. Evolution of placentalia.

Cell Biology Genetics, Physiology, Evolution, Embryology, Histology, Ecology.

Cell Biology: Ultra structure of the Cell-Plasma membrane – Mitochondria, Golgibodies, Nucleus, Endoplasmic reticulum, ribosomes. Chromosomes and their fine structure. Mitosis and meiosis-D.N.A. & R.N.A. and genic code, Protein synthesis.

Genetics: Mendel's law of inheritance – Critical review. Linkage, crossing over, Sex linked inheritance, Mutations, Inborn errors of Metabolism, Human genetics.

Physiology: Vitamins; Enzymes; Carbohydrate, protein and lipid metabolism; Osmoregulation, Thermoregulation; Excretion in Vertebrates; Muscle contraction; Nerve Impulse; vertebrate hormones and Mammalian reproduction.

Evolution: Origin of life – Modern concepts, theories of Evolution, Isolation, Speciation, Natural Selection, Hardy weinberg" Law, Population genetics and evolution, Adaptations, Evolution of Man. Zoogeographical realms of the world.

Embryology: Cleavage patterns; Gastrulation and its significance in development of vertebrates; Formation and functions of Foetal membranes, Types of placenta, organisers, Regeneration, genetic control of development organogenesis of central nervous system, sense organs, heart and kidney of vertebrate embryos.

Histology: Histology of Mammalian tissues and organs – Epithelial, connective, blood, bone, cartilage, skin, stomach, intestine, liver, pancreas, kidney, Testis and ovary.

Ecology: Concept of Ecosystem, Biogeochemical cycles, influence of environmental factors on animals, energy flow in Ecosystem, food chains & Tropic levels, community ecology. Ecological Succession, Environmental Pollution – Air, water, land, Noise, Radioactive, thermal and Visual, Effects of Pollution on ecosystem, Prevention of Pollution.

Wild life in India – Conservation.

Man & Biosphere Programme – Chipko movement.