**Lesson Plan (2022-23)**

Subject: **Zoology** Name of the Assistant/ Associate Professor: **Dr. Neeru**

Class and Section: **B. Sc. III Sem (Medical)**

**Paper-II: Mammalian Physiology and Biochemistry –I**

**SEPTEMBER**

* 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

**OCTOBER**

* Introduction, Classification, Structure, function and general properties of carbohydrates
* Introduction, Classification, Structure, function and general properties of proteins
* Transport through biomembranes (Active and Passive)

**NOVEMBER**

* Introduction, Classification, Structure, function and general properties of Lipids
* Muscles: Types of muscles, ultra-structure of skeletal muscle. 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

**DECEMBER**

* Nomenclature, Classification and mechanisms of enzyme action, Buffers
* Bones: Structure and types, classification, bone growth and resorption, effect of ageing on skeletal system and bone disorders

**Lesson Plan (2022-23)**

Subject: **Zoology** Name of the Assistant/ Associate Professor: **Dr. Neeru**

Class and Section: **B. Sc. V Sem (Medical)**

 **Paper-I: Environmental Biology**

 **Paper-II: Evolution and Developmental Biology**

**SEPTEMBER:**

* Historical perspectives, aims and scope of developmental biology
* Generalized structure of mammalian ovum & sperm, Spermatogenesis and Oogenesis,
* Fertilization, parthenogenesis, different types of eggs and patterns of cleavage.
* 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.

**OCTOBER:**

* Process of blastulation and fate-map construction in frog and chick.
* Gastrulation in frog and chick upto the formation of three germinal layers.
* Elementary knowledge of primary organizers.
* Elementary knowledge of extra embryonic membranes. Concepts of competence, determination and differentiation.
* Introduction to major ecosystems of the world
* Ecosystem:Concept, components, properties and functions; Ecological energetics and energy flow-food chain, food web, trophic structure; ecological pyramids concept of productivity.

**NOVEMBER:**

* Concept of regeneration.
* Migration in fishes and birds.
* Parental care in animals.
* Biogeochemical cycles:Concept, reservoir pool, gaseous cycles and sedimentary cycles.
* Concept of biodiversity and conservation of natural resources.
* Population: Growth and regulation.
* Population interactions**:** Competition, predation, parasitism, commensalisms and mutualism.
* Environmental Pollution:Air, water, soil and management strategies.

**DECEMBER:**

* Origin of life.
* Concept and evidences of organic evolution.
* Theories of organic evolution.
* Concept of micro, macro-and mega-evolution.
* Concept of species
* Phylogeny of horse.
* Evolution of man.