Lesson Plan 2023-24 (Even Sem)

Class: B.Sc First year (2nd sem) Medical

Teacher's Name : Dr. Poonam

Subject- Zoology

Week	Name of the Topic
1st week	**Phylum - Annelida:** General characters and classification up to order level Biodiversity and economic importance of Annelida
2nd week	Type study - *Pheretima* (Earthworm) Metamerism in Annelida Trochophore larva:. Affinities, evolutionary significance
3rd week	**Phylum - Arthropoda:** General characters and classification up to order level Biodiversity and economic importance of insects
4th week	Type study – *Periplaneta*
5th week	**Phylum - Mollusca:** General characters and classification up to order level Biodiversity and economic importance
6th week	Type study - *Pila* Torsion and detorsion in gastropoda Respiration and foot
7th week	**Phylum - Echinodermata:** General characters and classification up to order level Biodiversity and economic importance
8th week	Type Study -*Asteries* (Sea Star) Echinoderm larvae Aristotle's Lantern
9th week	**Phylum – Hemichordata**:Type study: *Balanoglossus*
10th week	**GENETICS** Elements of Heredity and variations. The varieties of gene interactions Linkage and recombination: Coupling and repulsion hypothesis, crossing-over and chiasma formation; gene mapping.
11th week	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 determination.
12th week	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.
13th week	Multiple allelism: Eye colour in Drosophila; A, B, 0 blood group in man. Human genetics: Human karyotype, Chromosomal abnormalities involving autosomes and sexchromosomes, monozygotic and dizygotic twins. Inborn errors of metabolism (Alcaptonuria, Phenylketonuria, Albinism, sickle-cell anaemia).
14th week	Nature and function of genetic material; Structure and type of nucleic acids; Protein synthesis. spontaneous and induced (chemical and radiations) mutations; gene mutations; chemical basis of mutations; transition, transversion, structural chromosomal aberrations (deletion, duplication, inversion and translocation); Numerical aberrations (autoploidy, euploidy and polyploidy in animals)
15th week	Applied genetics: Eugenics, euthenics and euphenics; genetic counseling, pre-natal diagnostics,DNA-finger printing, transgenic animals

Lesson Plan (Even Semester)

Class: B.Sc Second year (4th Semester) Medical 2023-24

Teacher's Name : Dr. Poonam

Subject-Zoology

Week	Name of the Topic
1st week	Amphibia: Origin, Evolutionary tree. Type study of frog (Rana tigrina), Parental Care in Amphibia
2nd week	Reptilia: Type study of Lizard (Hemidactylus), Origin, Evolutionary tree. Extinct reptiles;
3rd week	Poisonous and non-poisonous snakes; Poison apparatus in snakes.
4th week	Aves: Type study of Pigeon (Columba livia); Flight adaptation,
5th week	Principles of aerodynamics in Bird flight, migration in birds
6th week	Mammals: Classification, type study of Rat;
7th week	Adaptive radiations of mammals and dentition
8th week	Circulation: Origin, conduction and regulation of heart beat, cardiac cycle, electrocardiogram, cardiac output, fluid pressure and flow pressure in closed and open circulatory system;
9th week	Composition and functions of blood & lymph; Mechanism of coagulation of blood, coagulation factors; anticoagulants, haempoiesis
10th week	**Revision and Test**
11th week	Respiration: Exchange of respiratory gases, transport of gases, lung air volumes, oxygen dissociation curve of hemoglobin, Bohr's effect, Haburger's phenomenon (Chloride shift), control / regulation of respiration.
12th week	Excretion: Urine formation, counter-current mechanism of urine concentration, osmoregulation, micturition. Neural Integration: Nature, origin and propagation of nerve impulse along with medullated & non-medullated nerve fibre, conduction of nerve impulse across synapse.
13th week	Chemical integration of Endocrinology: Structure and mechanism of hormone action; physiology of hypothalamus, pituitary, thyroid, parathyroid, adrenal, pancreas and gonads. Reproduction: Spermatogenesis, Capacitation of spermatozoa, ovulation, formation of corpus luteum, oestrous-anoestrous cycle, Menstrual cycle in human; fertilization, implantation and gestation.
14th week	**Revision**
15th week	**Test**

Lesson Plan (Even Semester)

Class: B.Sc Final year (6th Semester) Medical 2023-24

Teacher's Name : Dr. Poonam

Subject-Zoology

Week	Name of the Topic
1st week	Sugarcane: (a) Sugarcane leaf-hopper (Pyrilla perpusilla) (b) Sugarcane Whitefly (Aleurolobus barodensis) (c) Sugarcane top borer (Sciropophaga nivella) (d) Sugarcane root borer (Emmalocera depresella)
2nd week	(e) Gurdaspur borer (Bissetia steniellus) With their systematic position, habits and nature of damage caused. Life cycle and control of Pyrilla perpusilla only.
3rd week	Cotton: (a) Pink bollworm (Pestinophora gossypfolla) (b) Red cotton bug (Dysdercus Cingulatus) (c) Cotton grey weevil (Myllocerus undecimpustulatus).
4th week	(d) Cotton Jassid (Amrasca devastans) With their systematic position, habits and nature of damage caused. Life cycle and control of Pectinophore gossypiella
5th week	Wheat: Wheat stem borer (Sesamia inferens) with its systematics position, habits, nature of damage caused. Life cycle and control.
6th week	Paddy: (a) Gundhi bug (Leptocorisa acuta) (b) Rice grasshopper (Hieroglyphus banian) (c) Rice stem borer (Scirpophaga incertullus) (d) Rice Hispa (Diceladispa armigera) With their systematic position, habits and nature of damage caused. Life cycle and control of Loptocorisa acuta
7th week	**Revision and Test**
8th week	Vegetables (a) Raphidopalpa faveicollis – The Red pumpkin beetle. (b) Dacus cucurbitas – The pumpkin fruit fly. (c) Tetranychus tecarius – The vegetable mite.
9th week	(d) Epilachna – The Hadda beetle. Their systematics position, habits and nature of damage caused. Life cycle and control of Aulacophora faveicollis.
10th week	Stored grains: (a) Pulse beetle (Callosobruchus maculatus) (b) Rice weevil (Sitophilus oryzae) (c) Wheat weevil (Trogoderma granarium) (d) Rust Red Flour beetles (Tribolium castaneum)
11th week	(e) Lesser grain borer (Rhizopertha dominica) (f) Grain & Flour moth (Sitotroga cerealella) Their systematic position, habits and nature of damage caused. Life cycle and control of Trogoderma granarium.
12th week	Insect control: Biological control, its history, requirement and precautions and feasibility of biological agents for control.
13th week	Chemical control: History, Categories of pesticides. Important pesticides from each category to pests against which they can be used. Insect repellants and attractants.
14th week	Integrated pest management. Important bird and rodent pests of agriculture & their management.
15th week	**Revision and Test**

Lesson Plan 2023-24 (Even Sem)

B.SC. (HONS) CHEMISTRY (2nd Semester)

Teacher's Name : Dr. Poonam

Subject- Zoology as Optional subject

Week	Name of the Topic
1st week	Chordates Introduction and origin.
2nd week	Protochordates General features and Phylogeny of Hemichordates, Urochordates and Cephalochordates..
3rd week	Retrogressive metamorphosis
4th week	Revision
5th week	Agnatha General features of living Agnatha
6th week	Pisces Osmoregulation, Migration and Parental care.
7th week	Amphibia Origin and evolution of terrestrial ectotherms, Parental care.
8th week	Revision/ **Test**
9th week	Reptiles Origin,Poisonous and non- poisonous snakes in India
10th week	Biting mechanism in snakes
11th week	Affinities of Sphenodon.
12th week	Aves :Origin, Flight adaptations, Mechanism of flight and Migration.
13th week	Mammals: Origin of Mammals.
14th week	Origin and evolution of human
15th week	**Revision and Test**

Lesson Plan (Even Semester)

B.SC. (HONS) CHEMISTRY (4th Semester)

Teacher's Name : Dr. Poonam

Subject- Zoology as Optional subject

Week	Name of the Topic
1st week	Elementary idea of gene mapping in bacteria,
2nd week	Transposons and transposition mechanisms
3rd week	Types of mutations and nomenclature
4th week	Mutagenesis & Types of DNA repair
5th week	DNA repair pathways Error-prone repair and mutagenesis
6th week	**Revision and Test**
7th week	Gene families: Multigene families with conserved domains
8th week	Repetitive DNA General account of Comparative Genomics
9th week	**Revision and Test**
10th week	Overview of prokaryotic and eukaryotic genomes
11th week	The Genome project: History, organization and goals of human genome project,
12th week	Mapping strategies.
13th week	Mitochondrial genome
14th week	**Revision**
15th week	**Test**