

Government College For Women, Mahendragarh

Department Of ZOOLOGY- Session : 2023-24

Name Of The Assistant Professor : Praveen Saroha

Class : B.Sc.1st- Semester 2

Lesson Plan

Week 01

Phylum - Annelida:

General characters and classification up to order level

Biodiversity and economic importance of Annelida

Type study - Pheretima (Earthworm)

Week 02

Metamerism in Annelida Trochophore larva:. Affinities, evolutionary significance

Phylum – Arthropoda:

General characters and classification up to order level

Biodiversity and economic importance of insects

Week 03

Type study – Periplaneta

Phylum – Mollusca:

General characters and classification up to order level

Week 04

Biodiversity and economic importance

Type study – Pila

Torsion and detorsion in gastropoda

Respiration and foot

Week 05

Phylum – Echinodermata:

General characters and classification up to order level

Biodiversity and economic importance

Week 06

Type Study -Asteries (Sea Star)

Echinoderm larvae

Aristotle's Lantern

Week 07

Phylum – Hemichordate

General characters
Type study: Balanoglossus

Week 08

Elements of Heredity and variations.
The varieties of gene interactions

Week 09

Linkage and recombination: Coupling and repulsion hypothesis, 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 determination.

Week 10

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.

Week 11

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

Week 12

Inborn errors of metabolism (Alcaptonuria, Phenylketonuria, Albinism, sickle-cell anaemia).
Nature and function of genetic material; Structure and type of nucleic acids; Protein synthesis.

Week 13

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 (autopolyploidy, euploidy and polyploidy in Animals)

Week 14

Applied genetics: Eugenics, eugenics and eugenics; genetic counseling, pre-natal diagnostics,

DNA-finger printing, transgenic animals

Week 15

Revision

Week 16

Revision

Government College For Women, Mahendergarh

Department Of ZOOLOGY - Session : 2023-24

Name of The Assistant Professor : PRAVEEN SAROHA

Class : B.Sc.2ND - Semester IV

Lesson Plan

Week 01

Amphibia: Origin, Evolutionary tree. Type study of frog (*Rana tigrina*),

Week 02

Parental Care in

Amphibia

Reptilia: Type study of Lizard (*Hemidactylus*)

Week 03

Origin, Evolutionary tree. Extinct reptiles;

Poisonous and non-poisonous snakes; Poison apparatus in snakes.

Week 04

Aves: Type study of Pigeon (*Columba livia*);

Week 05

Flight adaptation, Principles of aerodynamics in Bird flight, migration in birds.

Week 06

Mammals: Classification, type study of Rat; Adaptive radiations of mammals and dentition.

Week 07

Circulation: Origin, conduction and regulation of heart beat, cardiac cycle,

Electrocardiogram, cardiac output, fluid pressure and flow pressure in closed and open

Week 08

Circulatory system; Composition and functions of blood & lymph; Mechanism of Coagulation of blood, coagulation factors; anticoagulants, haemopoiesis

Week 09

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.

Week 10

Excretion: Patterns of excretory products viz. Amonotelic, ureotlic uricotelic, ornithine Cycle (Kreb's- Henseleit cycle) for urea formation in liver.

Week 11

Excretion: Urine formation, counter-current mechanism of urine concentration, Osmoregulation, micturition.

Week 12

Neural Integration: Nature, origin and propagation of nerve impulse along with Medullated & non-medullated nerve fibre, conduction of nerve impulse across synapse.

Week 12

Chemical integration of Endocrinology: Structure and mechanism of hormone

Action; physiology of hypothalamus, pituitary, thyroid, parathyroid, adrenal, pancreas and Gonads.

Week 13

Reproduction: Spermatogenesis, Capacitation of spermatozoa, ovulation,

Week 14

Formation of Corpus luteum, oestrous-anoestrous cycle, Menstrual cycle in human; fertilization, Implantation and gestation.

Week 15

Revision

Government College For Women, Mahendergarh

Department Of ZOOLOGY - Session : 2023-24

Name Of The Assistant Professor : PRAVEEN SAROHA

Class : B.Sc.3RD - Semester VI

Lesson Plan

Week 01

Introduction to world fisheries: Production, utilization and demand.

Week 02

Fresh Water fishes of India: River system, reservoir, pond, tank fisheries; captive and Culture fisheries, cold water fisheries.

Week 03

Fishing crafts and gears.

Week 04

Fin fishes, Crustaceans, Molluscs and their culture

Week 05

Seed production: Natural seed resources – its assessment, collection, Hatchery production.

Week 06

Nutrition: Sources of food (Natural, Artificial) and feed composition (Calorie and Chemical ingredients).

Week 07

Field Culture: Ponds-running water, recycled water, cage, culture; poly culture.

Week 08

Culture technology: Biotechnology, gene manipulation and cryopreservation of gamete

Week 09

Basic concepts of ecology: Definition, significance. Concepts of habitat and Ecological niche.

Week 10

Factors affecting environment: Abiotic factors (light-intensity, quality and duration), Temperature, humidity, topography; edaphic factors; biotic factors

Week 11

Ecosystem: Concept, components, properties and functions; Ecological energetics and Energy flow-food chain, food web, trophic structure; ecological pyramids concept of Productivity.

Week 12

Biogeochemical cycles: Concept, reservoir pool, gaseous cycles and sedimentary cycles.

Population: Growth and regulation.

Week 13

Origin of life.

Concept and evidences of organic evolution.

Theories of organic evolution.

Week 14

Concept of microevolution and concept of species

Concept of macro-and mega-evolution.

Week 15

Phylogeny of horse.

Evolution of man.