Government College For Women, Mahendragarh

Department Of ZOOLOGY- Session : 2025-26

Name Of The Assistant Professor : Praveen Saroha

Class : B.Sc.

- Semester I

Lesson Plan

Week -1

Protozoa General characters and classification up to order level

Type study of

Plasmodium

Week -2

- Porifera:

i) General characters and classification up to order level

iii) Type study - Sycon.

Week -3

Coelentrata:

i) General characters and classification up to order level

Type Study - Obelia

Week -4

Phylum - Helminths:

i) General characters and classification up to order level

Type study - Fasciola hepatica

Week 05

Phylum - Annelida:

General characters and classification up to order level

Type study - Pheretima (Earthworm)

Week 06

Phylum – Arthropoda:

General characters and classification up to order level

Type study – Periplaneta

Week 07

Phylum – Mollusca:

General characters and classification up to order level

Type study – Pila

Week 08

Phylum – Echinodermata:

General characters and classification up to order level

Type Study -Asteries (Sea Star)

Week 09

Phylum – Hemichordate

General characters

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- Semester III

Lesson Plan

Week-1

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.

Week 02

Endoplasmic reticulum (ER): types, role of ER in protein synthesis and transportation in animal cell.

Goigi complex: Structure, Associated enzymes and role of golgi-complex in animal cell.

Week-3

Ribosomes: Types, biogenesis and role in protein synthesis.

Lysosomes: Structure, enzyme and their role; polymorphism

Week 4

Mitochondria: Mitochondrial DNA; as semiautonomous body, biogenesis, mitochondrial enzymes (Only names), role of mitochondria.

Cytoskeleton: Microtubules, microfilaments, centriole and basal body. Cilia and Flagella

Week-5

Ultrastructure and functions of Nucleus: Nuclear· membrane, nuclear lamina, nucleolus, fine

Structure of chromosomes, nucleosome concept and role of histones,

Euchromatin and heterochromatin, chromosomes

Week 06

Introduction and mendal's lows of inheritance

The varieties of gene interactions

Linkage and recombination: Coupling and repulsion hypothesis, crossing-over and chiasma

Formation; gene mapping.

Week 07

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 08

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 09

Multiple allelism: Eye colour in Drosophila; A, B, 0 blood group in man.Human genetics:

Human karyotype, Chromosomal abnormalities involving autosomes and sex

Chromosomes, monozygotic and dizygotic twins

Week 09

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 10

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)

Week 11

Applied genetics: Eugenics, euthenics and euphenics; genetic counseling, pre-natal

Diagnostics,DNA-finger printing, transgenic animals

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- Semester V

Lesson Plan

Week-1

1. Introduction to world fisheries: Production, utilization and demand.

2 Fresh Water fishes of India: River system, reservoir, pond, tank fisheries; captive and culture

fisheries, cold water fisheries.

Week 2

Fishing crafts and gears.

4. Fin fishes, Crustaceans, Molluscs and their culture.

Week-3

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

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

ingredients).

Week 4

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

4. Culture technology: Biotechnology, gene manipulation and cryopreservation of

gametes.

Week-05

1. Introduction to world f

PAPER – 5.2 ECOLOGY & EVOLUTION

WEEK 06

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

ecological niche.

2 Factors affecting environment: Abiotic factors (light-intensity, quality and duration),

temperature, humidity, topography; edaphic factors; biotic factors.

WEEK 07

1. Ecosystem: Concept, components, properties and functions; Ecological energetics and

energy flow-food chain, food web, trophic structure; ecological pyramids concept of

productivity.

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

3. Population: Growth and regulation.

WEEK 08

Origin of life.

1. Concept and evidences of organic evolution.
2. Theories of organic evolution.
3. Concept of microevolution and concept of species

WEEK 09

1. Concept of macro-and mega-evolution.
2. Phylogeny of horse.
3. Evolution of man.