

KARACHI EDU COACHING CENTER | CLASS 9 BIOLOGY

Chapter 3: Biodiversity

Comprehensive coaching notes on classification systems, binomial nomenclature, and ecological conservation.



Definition and Introduction

What is Biodiversity?

Combination of Bio (life) and diversity (variation). It represents the degree of variation within and among species across different regions of Earth.

Scope of Life

Encompasses millions of organisms including bacteria, protozoans, algae, fungi, plants, and animals inhabiting diverse global ecosystems.

Importance of Biodiversity

Essential Products

Fiber, oil, dyes, rubber, timber, paper, and food sources.

Ecosystem Stability

Nutrient recycling and pollution reduction through forests.

Medicinal Resources

Natural drugs used by 80% of the world population.

Aims and Principles of Classification

Morphology & Structures

Homologous Organs: Similar in internal structure but different in function.

Analogous Organs: Different in structure but same in function.

Modern Criteria

Cytology: Cellular structure study.

Genetics & Biochemistry: DNA constitution and metabolic similarities.

History of Classification Systems

Two-Kingdom

Plant Kingdom and Animal Kingdom (Aristotle/Linnaeus).

Three-Kingdom

Added Protista kingdom for microorganisms (Ernst Haeckel, 1866).

Four-Kingdom

Added Monera for prokaryotes (Copeland, 1956).

Five-Kingdom

Added Fungi kingdom based on absorption nutrition (Whittaker, 1969).

The Five Kingdoms Overview

1. Monera

Prokaryotic unicellular organisms lacking true nucleus (Bacteria).

2. Protista

Eukaryotic unicellular and simple multicellular forms (Amoeba, Algae).

3. Fungi

Heterotrophic absorptive eukaryotes with chitin cell walls (Mushrooms).

4. Plantae & Animalia

Multicellular autotrophic plants and heterotrophic ingestive animals.

Binomial Nomenclature

Introduction

Introduced by Carolus Linnaeus. A universal two-word naming system consisting of a Generic name (Genus) and specific epithet (species name).

Rules of Naming

Capitalization: Genus name starts with a capital letter; species with small letter.

Formatting: Italicized when printed, underlined when handwritten.

Conservation of Biodiversity

Threats to Biodiversity

Deforestation and habitat destruction.

Overhunting, pollution, and introduction of invasive alien species.

Conservation Strategies

Establishment of national parks and wildlife sanctuaries.

Public education and strict legislation against illegal poaching.

End of Chapter 3 Notes

KARACHI EDU COACHING CENTER — Biology Department
