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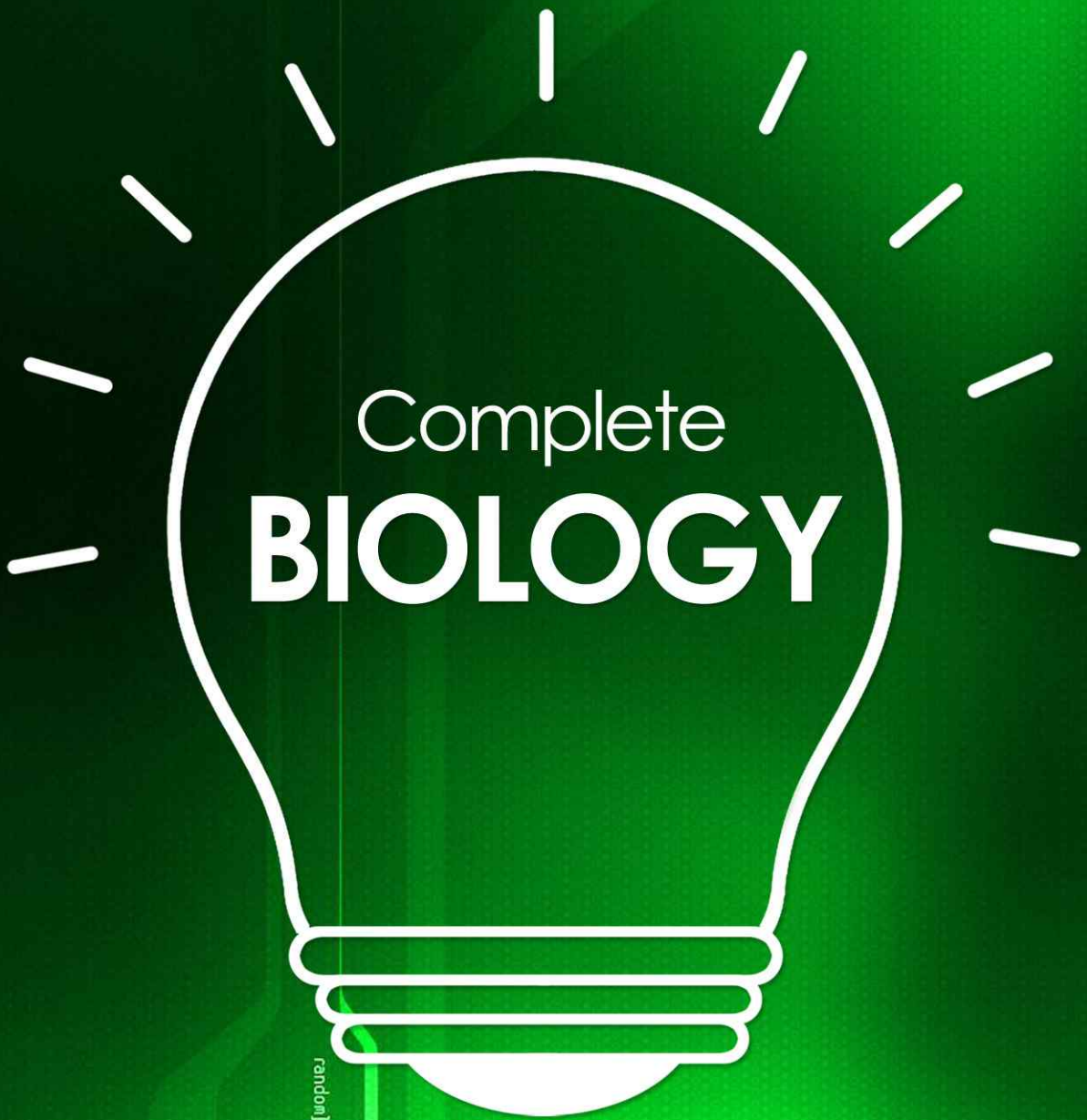

Complete BIOLOGY

NEET · CBSE eBOOKS

CLASS 11&12th

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CLASS 12th

Organisms and Populations

01. Introduction

The term ecology was coined and described by **E. Haeckel.** The term ecology was first authentically used by **Reiter.**

Father of ecology − **Reiter**

Father of Indian Ecology − **Prof. Ram Deo Misra**

The study of interaction or inter-relationship of organism with their environment is called ecology.

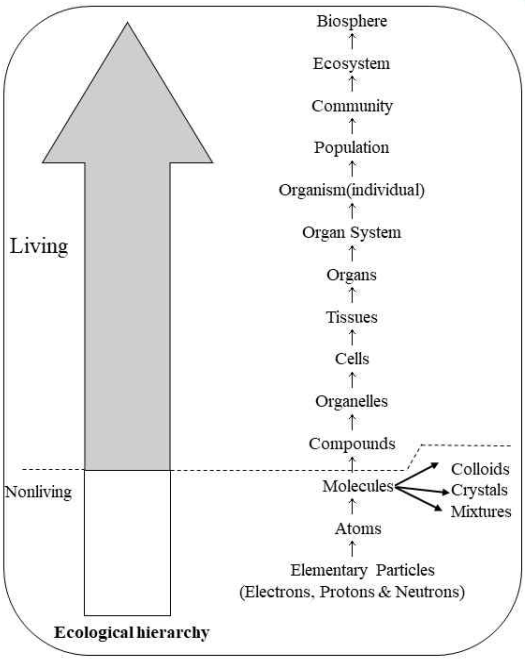
Organism ⇌ Environment

Branches of Ecology − It is based on organism level

(i) **Autecology or species ecology** – Study of the relation of a species with its environment is known as autecolocy

(ii) **Synecology or Biocoenology or Community ecology** − Study of the relation of the group of different species with their environment. Ex. Community, ecosystem, biome ecology.

Ecological Hierarchy



Some Ecological Terminology

Organism : Basic unit of study of ecology.

Species: Similar organisms having the **Potential fertile** for interbreed and **Producing fertile offspring.**

Population : Group of individuals of a plant or animal species inhabiting a given area or **group** of **individuals of a species.**

Community : Assemblage of different populations in an area, interacting with each other.

Ecosystem : Biological communities integrated with is's physical environment through the **flow** of **energy** and **recycling of nutrients.**

Land scape : A unit of land with natural boundary having a mosaic of patches, which represents different ecosystems.

Biome : Large regional unit or ecosystem characterized by major vegetation type (flora) and associated found in a specific climatic zone.

02. Environment, Habitat & Niche

Environment:

Environment is the sum total of all biotic (living) and abiotic (non-living) factors that surround and potentially influence an organism. Some components of the environments serve as **resources,** while other act as a **regulatory factor.**

Climate:

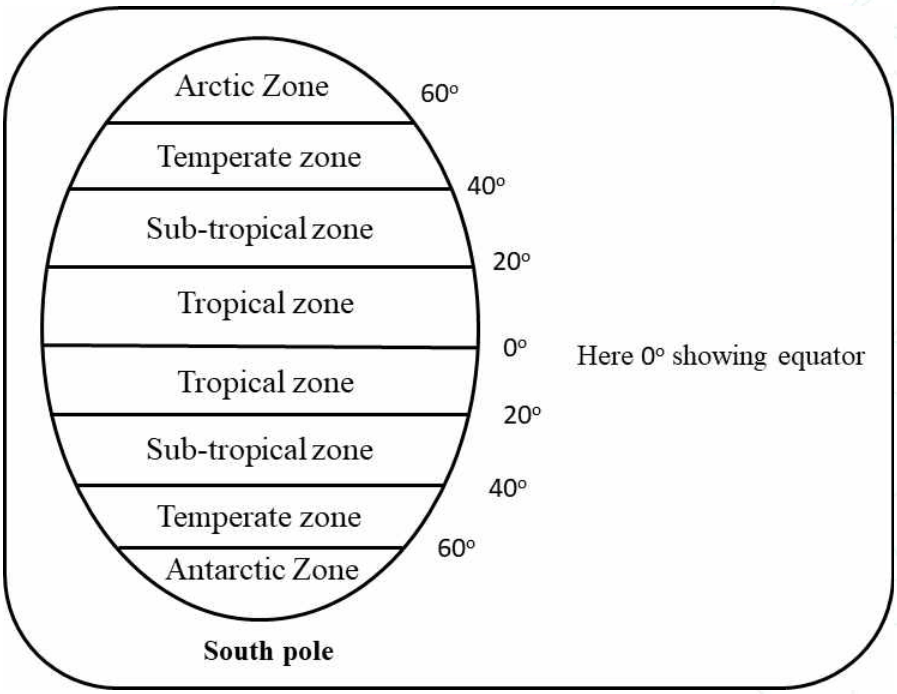
The short-term properties of the atmosphere (such as temperature, pressure, humidity, rainfall, sun- shine, cloud cover and wind), at a given place and time, is called as **weather. Climate** is the average **weather of an area,** Including general patterns of atmospheric conditions, seasonal variations and weather extremes averaged over a long period.

Climatic zones :

On the basis of variation in mean temperature along latitude, the mean climatic regions are-

(i) Tropical (0°-20° latitude)
(ii) Subtropical (20°-40° latitude)
(iii) Temperate (40°-60° latitude)
(iv) Arctic and Antarctic (60°-80° latitude)

The mean temperature declines as we move from tropical to arctic region. A similar climatic zonation occurs with increasing altitude in the mountains. A mountain located in a tropical region will successively have tropical, subtropical, temperate and alpine zones with increasing altitude.



NOTE ☞ The temperature and light values are maximum at the equator, decreases gradually towards the pole. Effect of altitude and latitude are almost same on temperature