Date.....

MODULE - III : ECOSYSTEM

ECOSYSTEM [A.G. TANSLEY, 1935]

⇒ The Basic Functional and Ecological unit in which Living organisms Interact

- Among Themselves
- With surrounding ENVIRONMENT

The components are linked together through

- BIOTIC
- ABIOTIC
- Nutrient cycles
- Energy flows

The ENERGY that flows through ecosystems are primarily OBTAINED FROM SUN.

Ecosystems are DYNAMIC ENTITIES.

Ecosystems are controlled by both factors :

- EXTERNAL
  - SOIL
  - CLIMATE
  - TOPOGRAPHY
- INTERNAL
  - DISTURBANCE
  - SUCCESSION
  - TYPES OF SPECIES

GLOBAL ECOSYSTEM : The Entire Biosphere consisting of several local ecosystems.

Date.....

ECOSYSTEM STRUCTURE AND FUNCTION

SPECIES COMPOSITION : The Identification and Enumeration of plant and animal species in an ecosystem.

MAJOR FUNCTIONS

- PRODUCTIVITY
- ENERGY FLOW
- NUTRIENT CYCLING
- DECOMPOSITION

The function of ecosystem is AFFECTED BY BIODIVERSITY.

Ecosystem also PROVIDES a wide variety of GOODS and SERVICES upon which people depend.

STRATIFICATION : Vertical Distribution of Different species occupying different strata.

TREES
↓
SHRUBS
↓
HERBS
↓
GRASSES

Date.....

ENERGY FLOW IN AN ECOSYSTEM

PAR : Photosynthetically Active Radiation ⇒ 50% out of the total incident solar radiation.

Plants capture only 2-10% of the PAR. This small amount ENERGY sustains the entire living world.

There is UNIDIRECTIONAL FLOW OF ENERGY :

SUN
↓
PRODUCERS
↓
CONSUMERS

The energy in an ecosystem is[i] TRANSFERRED in the FORM of FOOD.

Major part of food energy is[ii] lost as heat during metabolic activities.

Only a very small fraction becomes[iii] stored as BIOMASS.

Spiral

Date

1) PRODUCERS

⇒ The GREEN PLANTS in the ecosystem which can

- TRAP SOLAR ENERGY
- CONVERT ENERGY INTO CHEMICAL ENERGY

2) CONSUMERS

⇒ The animals that depend on plants for food.

3) DECOMPOSERS

⇒ The biotic components which decompose dead organic matter FOR REUSE by autotrophs.