

Ability Enhancement Compulsory Course (AECC)
Environmental Science
(For All Undergraduate Courses)
Semester I/II
Study Material 1 (Unit: 1 – 4; Lesson: 1-9)

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Ability Enhancement Compulsory Course
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Semester VII
Study Material : 2 (Lesson 10 - 16)



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Semester III
Study Material : I (Lesson 1 to 9)



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LESSION-2

ECOSYSTEM: STRUCTURE OF ECOSYSTEM

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INTRODUCTION

We are not alone in this world. We share our resources with other life forms. There are non-living things around us as well. Throughout our lifetime we keep on interacting with other living beings and non-living things.

LEARNING OBJECTIVES

After going through this lesson, you will be able to

1. Know the concept, definition and structure of ecosystem.
2. Distinguish between biotic and abiotic components of ecosystem.
3. Explain the different types of ecological pyramids.
4. Understand the term ecological succession.

1. CONCEPT OF ECOSYSTEM

Ecosystem is the basic structural and functional unit of the environment. Both the living and non-living component of the nature, when interact with each other to establish a stable living community, it is called as Ecosystem. That means there is a constant exchange of something between these living & non-livings, is called an Ecosystem. Without the living component, establishment of an ecosystem is not possible and vice versa. Both are two sides of a coin or very much complementary to each other.

The study of ecosystem includes complete analysis of the structure, regulation and the role of each and every component functioning there. Once we know it, in detail, the study of the ecosystem and its importance to the equilibrium of environment will be understood easily.

2. DEFINITION OF ECOSYSTEM

The study of all the physical as well as biological processes including the distribution and abundance of living organisms and the interaction in between them with their surrounding environment is known as Ecosystem. In simpler words, if any environmental changes occur in the physical or abiotic factors, they in turn change the type and number of the organisms that is both the plants and the animals, present in that particular area.

LESSON-3

ECOSYSTEM: FUNCTION OF THE ECOSYSTEM

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INTRODUCTION

Function means the working of a particular ecosystem of a particular area in. It includes the interlinking of organisms, their nutritional requirements, the circulation of nutrients, energy flow, and again decomposition of all the chemicals, both organic as well as inorganic and their release to the atmosphere. Mainly all these activities have been explained under three major categories as follows

1. Biogeochemical Cycle
2. Food chain and Food Web
3. Energy flow in the Ecosystem
4. Productivity

LEARNING OBJECTIVES

After going through this lesson, you will be able to

1. Know the categories and their respective sub-categories of biogeochemical cycle.
2. Understand working of food chain.
3. Distinguish between grazing and detritus food chain.
4. Give schematic representation of food web.
5. Explain energy utilization in an ecosystem.
6. Know the various concepts of productivity.

3.1 BIOGEOCHEMICAL CYCLE

As the name indicates, in an ecosystem, both biological as well as physical components, passing/rolling through the underground and above the ground to complete a cycle. Through Nutrient Cycling various, inorganic and organic compounds are formed and decomposed (normally forty elements are required by the living organisms in the nature). This is also called as nutrient cycles of the ecosystem. "Nature is self-sufficient by nature".

Biogeochemical Cycle has been divided into two major categories like atmospheric and edaphic cycling based on the types of the substance they are dealing with.