**B. Sc. IIIrd Year**

 **ECOLOGY**

**Definition**

It was Hanns Reiter who in 1868 appears to have introduced the term 'ecology (Oekologie)' by combining the two Greek words Oikos (home) and Logos (study).It has been derived from two Greek words namely, **'Oikos'** meaning home or estate and **'logos'** meaning study. Literally it means the study of the home or household of nature. One year later German zoologist Ernst Haeckel (1869) defined ecology. Ecology is defined 'as the scientific study of the relationship of the living organisms with each other and with their environment. Ecology defined as “a  branch of science, deals with the study of organisms, the environment and how the organisms interact with each other and their environment. Ecology is a multidisciplinary aspect: It is studied at various levels, such as organism, population, community, biosphere and ecosystem

Ecological studies are aimed to understand the relationships of organisms with their environment. Later on, an American ecologist Eugene P Odum (197 1) has defined 'ecology as the study of the structure and function of nature.

**Scope of Ecology**

* Helps to tackle the environmental problems- pollution, floods, variation in seasonal patterns, global problems like Green house effects, Ozone depletion, Acid rains, Deforestation etc.

• Necessary in maintaining ecological balance and understanding different biochemical cycles like Carbon, Oxygen, Water, Nitrogen cycles etc.

• Helps in protecting flora and fauna

• By study of ecology we can maintain balance in nature and can prevent many ecological disasters.

• Important role in human benefit, agriculture, pest control, management of grassland, forestry, and conservation of wild life.

**Subdivisions of Ecology**

Ecology was earlier divided into plant and animal ecology. However, modem ecology does

not make any such distinction since plants and animals are intimately interconnected and

interdependent amongst themselves and on their environment.

The three main subdivisions of ecology today **are** given below:

1. Autecology ii) Synecology iii) Habitat ecology.
2. Autecology: It is the study of individual species or individuals in relation to the environment. There are two approaches to autecological studies: (a) autecology of species where individual species are studied (b) population ecology where individuals of the same species are studied.
3. Synecology: A study of the groups of organisms in relation to their environment is called synecology.

**Synecological studies can be of two types:**

a) Community ecology: Community ecology is concerned with the study of biotic (living) community comprising of interdependent plants and animals in a particular area b) Ecosystem ecology: It deals with the community of living organisms and their environment as an integrated unit of nature.

iii) **Habitat ecology**: It is the study of the habitat or environment of organisms and its effect on the organisms. In this approach different types of habitats such as terrestrial, fresh water, marine, and estuarine are the focus of study.