



Environment and Ecology

Environment

Environment refers to the surroundings or conditions in which a person, animal, or plant lives. It consists of atmosphere, hydrosphere, lithosphere and biosphere.

Ecology and Ecosystem

- The word ecology is derived from greek words oikos and logos. Oikos meaning house and logos meaning to study.
- Ecology is defined as the study of interrelationship of different organisms with each other and their environment.
- An ecosystem is a community made up of living organisms and non-living components such as air, water and mineral soil, all interacting as a system.
- There are three components of ecosystem
 - (i) **Producers** are organisms that can make organic energy resources from abiotic components of environment.
 - (ii) **Consumers** are those organisms that gather energy by consuming material from others.
 - (iii) **Decomposers** are organisms that break down dead or decaying organisms.

Climate Change, Greenhouse Gases and Global Warming

- **Climate Change** refers to long-term change in the Earth's climate, especially a change due to an increase in average atmospheric temperature.
- **The Greenhouse Gases** (GHGs) in the atmosphere absorbs and emits radiation within the thermal infrared range. The process is the fundamental cause of the greenhouse effect. The primary greenhouse gases are: water vapour, carbon dioxide, methane, nitrous oxide and ozone.
- **Global Warming** is the increase of Earth's average surface temperature due to effect of greenhouse gases.

Pollution

- Environmental pollution is the effect of undesirable changes in our surroundings that have harmful effects on plants, animals and human beings.
- There are four types of pollution namely
 - (i) **Air pollution** is the contamination of air by a variety of substances causing health problems. Some important air pollutants are carbon monoxide, carbon dioxide, chlorofluorocarbons, ozone etc.

- (ii) **Water pollution** is the contamination of water bodies such as lakes, rivers, oceans, aquifers and ground water.
- (iii) **Land pollution** refers to degradation or destruction of Earth's surface and soil, directly or indirectly as a result of human activities.
- (iv) **Noise pollution** refers to non-harmonious sounds or vibrations that are unpleasant and irritating to ear.

Biodiversity

- It refers to the variety within the living world. It can be preserved by setting up biosphere reserves, wildlife and bird sanctuaries as well as national parks.
- National park is a reserved area for preservation of its natural vegetation, wildlife and natural beauty.
- Wildlife sanctuary is a reserved area for preservation of endangered species.

Important Sanctuaries and National Parks

Name of Sanctuary/Park	Location	Important Species
Corbett National Park	Uttarakhand	Tiger, Elephant, Panda
Dudhwa National Park	Uttar Pradesh	Tiger, Cheetah, Sambar
Kaziranga National Park	Assam	One Horned Rhinoceros
Gir National Park	Gujarat	Asiatic Lions
Kanchenjunga National Park	Sikkim	Red Panda, Musk Deer
Simlipal Sanctuary	Odisha	Gaur, Chital, Tiger, Cheetah
Ghana Bird Sanctuary	Rajasthan	Siberian Crane
Bhitarkanika Sanctuary	Odisha	Crocodile, Sea turtle



Practice Exercise

1. What are the three components of ecosystem?
 - (a) Producers (b) Consumers
 - (c) Decomposers (d) All of these
2. Humans can pollute the environment
 - (a) deforestation
 - (b) urbanisation
 - (c) burning of fossil fuels
 - (d) All of the above
3. Which of the following is not a Greenhouse Gas?
 - (a) Carbon dioxide (b) Methane
 - (c) Nitrous Oxide (d) Oxygen
4. Which of the following is not a form of pollution?
 - (a) Excessive radioactivity
 - (b) Too much noise
 - (c) Plastic particles in food items
 - (d) Generation of oxygen by plants while making food
5. The non-living environment in an area will not include
 - (a) people living there
 - (b) the atmosphere
 - (c) the soil
 - (d) the Sun

