

## **Chapter 19: Environment and Sustainable Economic Development**

### **Learning Objectives**

- Introduction
  - Meaning of Environment
  - Functions of the Environment
  - Reasons for Environmental Crisis
- Pollution
  - Air Pollution
  - Water Pollution
  - Noise Pollution
- Global Warming and Ozone depletion
  - Global warming
  - Ozone depletion
- Environmental Degradation
  - Degradation of forest or Deforestation
  - Land Degradation
  - Causes of Environment Degradation
  - Measures to Control Environmental Degradation
- Sustainable development
  - Strategies for Sustainable Development

### **1 Mark Questions**

Q 1) What is meant by Environment?

A) Environment is defined as the total planetary inheritance and the totality of all resources.

Q 2) What does Environment Includes?

A 2) Environment includes all the biotic and abiotic factors that influence each other.

Q 3) What do you mean by biotic elements?

A 3) All living elements like birds, animals and plants, forests, fisheries etc. are biotic elements.

Q 4) Give the meaning of Renewable Resources?

A) These are those resources which can be used without the possibility of being exhausted, such as trees, fishes etc.

Q 5) What do you mean by non-renewable resources?

A 5) These are those resources which get exhausted with extraction and use such as coal, gas etc.

Q 6) What is included under abiotic elements?

A 6) It includes non-living elements like air, water, land etc.

Q 7) What happens when the rate of resource extraction exceeds that of their re-generation?

A 7) When the rate of resources extraction exceeds that of their re-generation then environment fails to perform its vital function of life substance and it lead to the situation of Environmental Crisis.

Q 8) What do you mean by the Carrying capacity of environment?

A 8) Carrying capacity of the environment implies that the resources extraction is not above the rate of regeneration of the resources and the wastes generated are within the assimilating capacity of the environment.

Q 9) How the opportunity cost negative Environmental impact are high?

A 9) Increased financial commitments of the Government due to Global warming and Ozone depletion and rise in expenditure on health due to decline in air and water quality shows that opportunity cost of the negative environment impact on high.

Q 10) What do you mean by Pollution?

A 10) Pollution is the Introduction of contaminates into an environment, that causes instability, disorder, harm or discomfort to the ecosystem.

Q 11) What is Global warming?

A 11) Global warming is the observed and projected increase in the average temperature of earth's atmosphere and oceans.

Q 12) What has caused Global Warming?

A 12) The Global warming is due to increase in the Green-house gas concentrations, like water vapour, carbon-dioxide, methane and ozone in the atmosphere.

Q 13) Give the meaning of air pollution.

A 13) Air pollution is the presence of materials in air such concentration, which are harmful to man and his environment.

Q 14) Mention any 1 measure to control air pollution in vehicles.

A 14) Promotion of cleaner fuels, like use of CNG instead of petrol or diesel.

Q 15) What is Sustainable development?

A 15) It is the development, which will allow all future generations to have a potential average quality of life, that is at least as high, which is being enjoyed by the current generation.

Q 16) What is meant by Bio diversity?

A 16) Bio diversity is defined as the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystem and the ecological complexes of which they are a part.

Q 17) What do you mean by ozone depletion?

A 17) It refers to destruction of ozone in the ozone layer, due to presence of chlorine from manmade chlorofluorocarbons and other forces.

Q 18) What has lead to depletion of ozone layer?

A 18) The problem of ozone depletion is cost by high levels of chlorine and bromine compounds in the stratosphere.

Q 19) Why have some resources become extinct?

A 19) Some resources have become extinct because their extinction has been above the rate of regeneration.

Q 20) How has the supply – demand relationship lead to degradation of environment?

A 20) The demand for resources has gone beyond the rate of regeneration (supply). It has increased the pressure on the absorption capacity of the environment and such several of the supply – demand relationship has lead to degradation of the environment.

Q 21) What has lead to the Air pollution in urban areas?

A 21) Increasing number of motor vehicles and concentration of industries in urban areas and has lead to air pollution in urban areas.

Q 22) State the 2 major environmental issues that the world is facing today?

A 22) (i) Depletion of natural resources (ii) Environmental degradation

### **Functions of Environment**

1. It provides resources for production:- Resources such as renewable and non- renewable are supplied by the environment.
2. Environment assimilates wastes.
3. It sustains life by providing essential elements like sun, soil, air, water etc.
4. It provides aesthetic services: - It includes land, forest, water bodies, rainfall, mountain etc. , with this people enjoy the beauty of hill station and to improve the quality of life.

### **Carrying Capacity**

Carrying capacity means 2 things.

1. Resources extraction should remain below the rate of resource generations.
2. Generation of wastes should remain within the absorption capacity of the environment.

If these two conditions are not fulfilled, then environment fails to perform its vital functions of life sustenance and it leads to the situations of environmental crises.

### **Reason for Environmental Crises**

- Population explosion and Industrial revolution has increased the demand for environmental resources, but their supply is limited due to misuse and overuse.
- The intensive and extensive extraction of both renewable and non-renewable resources has exhausted some of the vital resources.
- Extinction of many resources and continuous rising population has also resulted in environmental crisis.
- Due to affluent consumption and production standard of developed world, the waste generated is beyond the absorptive capacity of the environment.
- The development process has polluted environment, water and atmosphere and there is decline in air and water quality. It has resulted in increased incidence of respiratory and water borne diseases.

- The expenditure on health is also rising. Global environmental issues such as global warming. Ozone depletion also contributes to the increased financial commitments of government.

### **Pollution**

Pollution is the introduction of contaminants into an Environment that causes instability, disorder, harm and or discomfort in the ecosystem.

Pollution is substances, chemicals or factors which cause adverse effect on natural quality of any constituent of environment.

### **6 Marks Questions**

#### **Strategies for Sustainable development**

The following strategies should be adhered to, for sustainable development.

1. **Use of Non-conventional source of Energy** – India is mostly dependent on thermal and hydropower plants which have adverse environmental impact. Non-conventional sources like wind and solar says are cleaner and greener technologies, which can be effectively used to replace thermal and hydropower.
2. **Use of Cleaner fuels** – Use of Compressed Natural Gas (CNG) is being promoted to be used as fuel. In Delhi, the use of CNG as fuel in public transport system has lowered air pollution and the air has become cleaner. The use of LPG and Gobar Gas is being promoted which reduces air pollution.
3. **Establishment of Mini-Hydel plants** – Mountain regions and streams are used to generate electricity through mini Hydel plants. These are environment friendly.
4. **Traditional Knowledge and Practices** – Traditionally all practices relating to agriculture system, health care system, housing, transport etc. used to be environment friendly. The shift from the traditional system has caused large scale damage to the environment as our social heritage.
5. **Use of Bio-Compost** – The use of chemical fertilizers to increase the Agricultural production has not only adversely affected the large areas of productive land but also contaminate the water bodies. Increases in demand for organic food demand for dung are in increased use which is an important fertilizer and soil conditioner.
6. **Control of Bio pest**
7. **Change in unsustainable patterns of consumption and production** – India has taken large number of steps for sustainable development.