Environment

Concept Explanation: Environment refers to the surroundings or conditions in which organisms live and operate. It encompasses both physical and biological components that sustain life and provide resources.

Key Definitions / Features:

- **Physical Environment:** Also known as the non-biological environment, it includes land, water, climate, mountains, minerals, and other natural resources provided by nature.
- **Biological Environment:** Also called the living environment, it includes humans, animals, birds, plants, and microorganisms.
- **Functions and Role of Environment:**
  - Supplies resources essential for life and economic activities.
  - Sustains life by maintaining ecological balance.
  - Assimilates waste products, helping in natural recycling.
  - Enhances the quality of life through ecosystem services.

Illustrative Example: Forests provide oxygen, timber, and habitat for wildlife, illustrating the environment's role in resource supply and life sustenance.

Practice Set:

- *Level 1 – Easy:* Define physical and biological environment with examples.
- *Level 2 – Moderate:* Explain the functions of the environment in sustaining life.
- *Level 3 – Challenging:* Discuss how the environment assimilates waste and its importance for economic development.

Answer Key:

- Physical environment includes non-living components like land and water; biological environment includes living organisms.
- Functions include resource supply, life sustenance, waste assimilation, and quality of life enhancement.
- Assimilation of waste involves natural processes like decomposition and absorption, preventing pollution and maintaining ecological balance.

Quick Reference: Environment = Physical + Biological components; Functions = Resources + Life support + Waste assimilation + Quality of life.

Glossary:

- **Environment:** Surroundings in which organisms live.
- **Physical Environment:** Non-living natural components.
- **Biological Environment:** Living organisms and ecosystems.

Causes of Environment Degradation

Concept Explanation: Environment degradation refers to the deterioration of the environment through depletion of resources, destruction of ecosystems, and pollution.

Key Causes:

- Population growth
- Poverty
- Agricultural development
- Industrialisation
- Transport development
- Urbanisation
- Foreign indebtedness
- Market failure

Definitions:

- **Poverty:** The inability to sustain basic livelihood needs.
- **Urbanisation:** Expansion of cities and urban areas.

Illustrative Example: Rapid industrialisation without pollution control leads to air and water pollution, degrading the environment.

Practice Set:

- *Level 1 – Easy:* List any four causes of environment degradation.
- *Level 2 – Moderate:* Explain how urbanisation contributes to environmental degradation.
- *Level 3 – Challenging:* Analyze the role of market failure in environmental degradation with examples.

Answer Key:

- Causes include population growth, poverty, industrialisation, urbanisation.
- Urbanisation increases demand for land and resources, leading to deforestation and pollution.
- Market failure occurs when environmental costs are not reflected in prices, leading to overuse and pollution.

Quick Reference: Causes mnemonic: Peter Pan Ate Indian Tart Under Frozen Mango (Population, Poverty, Agriculture, Industrialisation, Transport, Urbanisation, Foreign debt, Market failure).

Glossary:

- **Market Failure:** Inefficient allocation of resources causing environmental harm.
- **Foreign Indebtedness:** External debt affecting economic decisions impacting environment.

Effects of Economic Development on Environment or Resources

Concept Explanation: Economic development impacts the environment and natural resources in various ways, often leading to degradation and pollution.

Key Effects:

- Global warming
- Depletion of ozone layer
- Environmental crisis
- Rise in opportunity cost of negative environmental impacts
- Supply-demand reversal of environmental resources
- Air pollution
- Water pollution
- Solid and hazardous waste accumulation
- Deforestation
- Land degradation

Definitions:

- **Ozone Layer:** Atmospheric layer protecting Earth from UV radiation.

- **Water Pollution:** Contamination of water bodies by waste.
- **Air Pollution:** Contamination of air by industrial and vehicular emissions.

Effect of Global Warming on Economic Development:

- Loss of agricultural productivity
- Reduced labour supply and productivity
- Inflation due to reduced production
- Depletion of natural resources

Illustrative Example: Increased air pollution from factories leads to health issues, reducing workforce productivity and increasing healthcare costs.

Practice Set:

- *Level 1 – Easy:* Define global warming and list two effects on the environment.
- *Level 2 – Moderate:* Explain how economic development causes depletion of the ozone layer.
- *Level 3 – Challenging:* Discuss the opportunity cost of environmental degradation with examples.

Answer Key:

- Global warming is the rise in Earth's surface temperature due to greenhouse gases.
- Effects include air pollution and deforestation.
- Economic activities release chemicals that destroy ozone molecules, thinning the ozone layer.
- Opportunity cost includes loss of ecosystem services and health costs due to pollution.

Quick Reference: Effects mnemonic: Global Deforestation Extracts Radiation from Sun (Global warming, Depletion of ozone, Environmental crisis, Rise in opportunity cost, Supply-

demand reversal).

Glossary:

- **Global Warming:** Increase in Earth's surface temperature.
- **Deforestation:** Clearing of forests for development.

Sustainable Development

Concept Explanation: Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

Strategies to Achieve Sustainable Development:

- Use of non-conventional energy sources
- Promotion of LPG and Gobar gas in rural areas
- Use of CNG in urban areas
- Harnessing wind power and solar power through photovoltaic cells
- Development of mini hydel plants
- Bio-composting
- Bio-pest control

Illustrative Example: Solar panels installed in rural areas reduce dependence on fossil fuels, promoting sustainable energy use.

Practice Set:

- *Level 1 – Easy:* Define sustainable development.
- *Level 2 – Moderate:* List three strategies to achieve sustainable development.

- *Level 3 – Challenging:* Evaluate the role of renewable energy in sustainable development.

Answer Key:

- Sustainable development balances present needs with future resource availability.
- Strategies include non-conventional energy, bio-composting, and bio-pest control.
- Renewable energy reduces pollution and conserves resources, essential for sustainability.

Quick Reference: Sustainable development = Present needs + Future resource conservation.

Glossary:

- **Non-conventional Energy:** Energy sources like solar, wind, and bio-gas.
- **Bio-composting:** Using organic waste to produce compost.