

Question: What is the main cause of ozone depletion and the ozone hole?

Answer: Halocarbons such as CFCs.

Question: What does the ozone layer prevent from reaching the Earth?

Answer: Ultraviolet rays.

Question: In which unit is the total ozone in the atmosphere measured?

Answer: Dobson Unit.

Question: Which gases are major contributors to the greenhouse effect?

Answer: Carbon dioxide and nitrous oxide.

Question: What are the three R's of environmental conservation?

Answer: Reduce, Reuse, Recycle.

Question: What is the natural residence of an organism called?

Answer: Habitat.

Question: What helps organisms survive in their habitat conditions?

Answer: Adaptation.

Question: Shelford's Law of Tolerance was named after whom?

Answer: Ernest Shelford.

Question: Organisms with a wide tolerance range show what type of distribution?

Answer: Wide distribution with high population.

Question: A wide variety of living organisms is called?

Answer: Biodiversity.

Question: What is the sleep-like state adopted by animals to reduce metabolism?

Answer: Hibernation.

Question: Hyenas and vultures are classified as what?

Answer: Scavengers.

Question: What is the relationship where both organisms benefit?

Answer: Mutualism.

Question: Which feature is not typical of heliophytes?

Answer: Vigorous fruiting and flowering.

Question: Which is not a feature of 'r' selected species?

Answer: Parental care.

Question: Who proposed the term ecosystem?

Answer: A.G. Tansley.

Question: What percentage of oxygen and carbon dioxide exists in the atmosphere?

Answer: 20.95% oxygen and 0.04% carbon dioxide.

Question: What is the smallest long-sustained artificial ecosystem?

Answer: Folsom bottle.

Question: A group of species exploiting resources in the same way is called?

Answer: Guild.

Question: What are abiotic components of an ecosystem?

Answer: Non-living components like soil, water, and minerals.

Question: A set of ecosystems is called?

Answer: Biome.

Question: Acid rain is mainly caused by which gases?

Answer: Sulfur dioxide and nitrogen oxides.

Question: What produces the greenhouse effect?

Answer: Absorption and re-emission of infrared radiation.

Question: What is a major effect of acid deposition?

Answer: Dying forests and lakes.

Question: Which chemical contributes to photochemical smog?

Answer: PAN.

Question: When did the concept of sustainable development emerge?

Answer: 1980.

Question: Sustainable development aims to achieve what?

Answer: Balanced social, economic, and environmental growth.

Question: What is the maximum population an environment can support called?

Answer: Carrying capacity.

Question: Which activity causes maximum regional and global pollution?

Answer: Industrialization.

Question: Chemical industries do not cause which pollution?

Answer: Nuclear pollution.

Question: The first step towards sustainable development was taken at which conference?

Answer: Stockholm Conference.

Question: What is Agenda 21?

Answer: A UN action plan for sustainable development.

Question: What does UNCED stand for?

Answer: United Nations Conference on Environment and Development.

Question: Extraction of minerals from Earth is called?

Answer: Mining.

Question: The Basel Convention deals with what?

Answer: Transboundary movement of hazardous wastes.

Question: Sunlight, air, soil, and water are examples of what resources?

Answer: Renewable resources.

Question: What is a disadvantage of renewable energy?

Answer: Unreliable supply.

Question: What is another major limitation of renewable

energy?

Answer: Intermittent availability.

Question: Which is not a renewable energy source?

Answer: Coal.

Question: Identify a non-renewable energy resource.

Answer: Coal.

Question: Which parameter indicates the standard of living of a country?

Answer: Per capita energy consumption.

Question: What is the relationship between energy, economy, and environment?

Answer: All three are interrelated.

Question: What is the main cause of global warming?

Answer: Burning of fossil fuels.

Question: What is a major effect of global warming?

Answer: Climate pattern changes.

Question: What are inexhaustible resources called?

Answer: Renewable resources.

Question: Which renewable source generates maximum

power in India?

Answer: Solar energy.

Question: Are non-renewable resources finite?

Answer: Yes.

Question: Which theory relates to non-renewable resource economics?

Answer: Hotelling's theory.

Question: TerraPower is associated with which energy source?

Answer: Nuclear energy.

Question: Which life cycle includes combustion and carbon exchange?

Answer: Carbon cycle.

Question: What is the primary component of coal?

Answer: Carbon.

Question: Which ministry manages petroleum and natural gas in India?

Answer: Ministry of Petroleum and Natural Gas.

Question: Where was Asia's first oil well drilled?

Answer: Assam, India.

Question: Which is the most abundant fossil fuel in India?

Answer: Coal.

Question: Which non-renewable energy is not a fossil fuel?

Answer: Nuclear energy.

Question: What is India's major non-renewable energy source?

Answer: Coal.

Question: Is natural gas renewable?

Answer: No.

Question: How many nuclear power stations are there in India?

Answer: Eight.

Question: What is a major cause of climate change?

Answer: Greenhouse gas emissions.

Question: Which gas contributes most to global warming?

Answer: Carbon dioxide.

Question: Which sector emits the most greenhouse gases globally?

Answer: Agriculture.

Question: Which is not a direct consequence of climate change?

Answer: Decrease in Earth's rotation speed.

Question: What causes ocean acidification?

Answer: Increased atmospheric carbon dioxide.

Question: What is the Kyoto Protocol?

Answer: An international agreement to reduce carbon emissions.

Question: What percentage of global CO₂ emissions comes from transportation?

Answer: 24%.

Question: Which renewable source best reduces greenhouse gases?

Answer: Wind energy.

Question: Which country is currently the largest CO₂ emitter?

Answer: China.

Question: Which activity helps mitigate climate change?

Answer: Planting trees.

Question: The Paris Agreement aims to limit warming below

what temperature?

Answer: 1.5 degrees Celsius.

Question: What is an example of climate change adaptation?

Answer: Building flood defenses.

Question: How many biodiversity hotspots are there in the world?

Answer: 36

Question: Define ecosystem.

Answer: A community of organisms interacting with their physical environment.

Question: Name one important strategy for biodiversity conservation.

Answer: Biosphere reserves

Question: Which tree is considered an environmental hazard in many regions?

Answer: Eucalyptus

Question: The greenhouse effect is mainly caused by which gas?

Answer: Carbon dioxide

Question: Which gas is not a greenhouse gas?

Answer: Nitrogen

Question: Which is the best sustainable source of electricity generation in India?

Answer: Hydroelectric power

Question: What percentage of solar energy is utilized by plants in a food chain?

Answer: 1%

Question: The transitional zone between two distinct communities is called?

Answer: Ecotone

Question: The Chipko Movement was primarily against what?

Answer: Deforestation

Question: The Global-500 Award is given for achievements in which field?

Answer: Environmental protection

Question: State one major cause of biodiversity loss.

Answer: Habitat destruction

Question: In an ecosystem, who are the producers?

Answer: Green plants

Question: Which component links biotic and abiotic components in an ecosystem?

Answer: Producers

Question: Give one example of an artificial ecosystem.

Answer: Aquarium

Question: Name one cycle that is part of the geological cycle.

Answer: Hydrological cycle

Question: Which form of energy is primarily stored in biomass?

Answer: Solar energy

Question: Who coined the term "Ecology" in 1866?

Answer: Ernst Haeckel

Question: Which organisms are also called detritivores?

Answer: Decomposers

Question: Which human activity decreases atmospheric oxygen levels?

Answer: Deforestation

Question: A large number of interlinked food chains form a/an _____.

Answer: Food web

Question: Which atmospheric layer contains the ozone layer that absorbs UV radiation?

Answer: Stratosphere

Question: Deforestation generally decreases what?

Answer: Rainfall

Question: What is a species restricted to a specific geographic area called?

Answer: Endemic species

Question: Which ecological pyramid is always upright?

Answer: Pyramid of energy

Question: Which is the most stable ecosystem?

Answer: Ocean ecosystem

Question: Diversity of different kinds of living organisms in a habitat is called?

Answer: Species diversity

Question: Energy flow in an ecosystem is?

Answer: Unidirectional

Question: Addition of _____ to the environment is called pollution.

Answer: Pollutants

Question: To save the environment, use of _____ energy should be encouraged.

Answer: Renewable energy

Question: Unchecked use of insecticides, pesticides, and fertilizers causes _____ pollution.

Answer: Soil pollution

Question: Exposure to _____ over a long period of time may cause deafness.

Answer: Noise

Question: Melting of polar ice is the result of _____.

Answer: Global warming

Question: Bursting of crackers causes _____ pollution.

Answer: Air pollution

Question: The living elements of the environment are called _____ factors.

Answer: Biotic factors

Question: The non-living elements of the environment are called _____ factors.

Answer: Abiotic factors

1. State the significance and scope of environmental education.

Significance:

Environmental education creates awareness about environmental problems and helps individuals understand how human activities affect nature. It develops a sense of responsibility toward protecting the environment and is essential for achieving sustainable development.

Scope:

It includes natural resource management, pollution control, biodiversity conservation, climate change mitigation, and the promotion of eco-friendly technologies and lifestyles. It applies to both formal education (schools and colleges) and non-formal education (public awareness campaigns).

2. Define environment and ecosystem.

Environment:

The environment is the total of all living (biotic) and non-living (abiotic) components that surround an organism and influence its life. It includes air, water, land, plants, animals, and social conditions.

Ecosystem:

An ecosystem is a functional unit of nature where living

organisms interact with one another and with their physical environment for the exchange of energy and nutrients.

Examples: A pond, a forest, or a desert.

3. What is the major significance of biodiversity?

Ecological Stability: Maintains balance and resilience in ecosystems.

Resource Base: Provides food, medicine, fuel, and raw materials.

Ecosystem Services: Supports pollination, soil formation, water purification, and climate regulation.

Aesthetic and Cultural Value: Encourages tourism, recreation, and cultural traditions.

4. Define Ecology.

Ecology is the branch of science that studies the relationships between living organisms and their environment.

5. What is Environment?

The environment includes everything around us—both living

and non-living—that influences our life and activities.

6. What are renewable resources?

Renewable resources are natural resources that can be replenished naturally in a short period of time or are virtually inexhaustible.

Examples: Solar energy, wind energy, hydropower, biomass, and forests (when managed sustainably).

7. What is the ozone layer? How does it act as a protective cover for Earth?

Definition:

The ozone layer is a region in the Earth's stratosphere containing a high concentration of ozone (O₃) gas.

Protective Role:

It absorbs 97–99% of the Sun's harmful ultraviolet (UV-B and UV-C) radiation, protecting humans from skin cancer and cataracts and preventing damage to marine life and crops.

8. List the methods of preventing acid rain.

Reduce the burning of fossil fuels such as coal and oil.

Install scrubbers in industrial chimneys to remove sulfur dioxide (SO₂) and nitrogen oxides (NO_x).

Use catalytic converters in vehicles.

Shift to renewable energy sources like solar and wind.

Promote energy efficiency to reduce overall power consumption.

9. Explain the concept of green building.

A green building is designed, constructed, and operated to minimize its negative impact on the environment.

Key Features:

Efficient use of energy, water, and materials

Use of recycled or non-toxic materials

Maximizing natural light and ventilation

Reducing construction waste and pollution

10. How do eco-friendly materials help in sustainable development?

Eco-friendly materials such as bamboo, recycled steel, and fly ash bricks contribute by:

Reducing the depletion of natural resources

Lowering energy consumption during production

Minimizing waste and pollution

Improving indoor air quality

Meeting present needs without compromising future generations

11. State the significance and scope of environmental education.

Environmental education is essential for developing informed citizens capable of solving environmental problems. Its scope ranges from local environmental initiatives to global climate policies.

12. What is the difference between renewable and non-renewable resources?

<i>Feature</i>	<i>Renewable Resources</i>	<i>Non-Renewable Resources</i>
<i>Replenishment</i>	<i>Replenished naturally in a short time</i>	<i>Take</i>

millions of years to form

Availability Can be sustained if managed properly Limited and exhaustible

Pollution Usually cause less pollution Often cause higher pollution

Examples Solar, wind, water Coal, petroleum, natural gas

13. What is the concept of sustainable development?

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Report, 1987). It balances economic growth, social development, and environmental protection.

14. Define the concept of Ecology.

Ecology is the scientific study of interactions between organisms and their physical and biological environment.

15. Define the need for sustainable development.

The need for sustainable development arises due to:

Rapid depletion of natural resources

Increasing pollution

Population growth

Climate change threats

The need for long-term economic and social stability

16. Explain at least five eco-friendly materials and their contribution.

Bamboo: Fast-growing and renewable; reduces deforestation.

Fly Ash Bricks: Made from industrial waste; conserve soil and reduce landfill use.

Recycled Steel: Saves energy compared to new steel production.

Cork: Harvested without cutting trees; renewable and insulating.

Hempcrete: Absorbs carbon dioxide; lightweight and energy-efficient.

17. What is acid rain? Define briefly the factors responsible.

Definition:

Acid rain is precipitation with a pH level below 5.6 caused by atmospheric pollution.

Responsible Factors:

Emission of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) from power plants, industries, and vehicles. These gases react with water vapor to form sulfuric and nitric acids.

18. What is meant by the impact of energy usage on the environment?

It refers to the negative effects caused by energy production and consumption, such as:

Air pollution

Global warming due to greenhouse gases (CO₂, methane)

Water pollution

Land degradation from mining

19. What is the ozone hole? Explain its impact.

Ozone Hole:

A severe thinning of the ozone layer, especially over Antarctica, caused by chemicals like CFCs.

Impact:

Increased UV radiation

Higher risk of skin cancer and cataracts

Damage to marine ecosystems

Reduced agricultural productivity

20. Explain the steps to minimize global warming.

Shift to renewable energy sources

Improve energy efficiency

Increase afforestation

Promote sustainable transport (EVs, public transport)

Practice Reduce, Reuse, Recycle

Enforce strict industrial emission regulations