

5. Biosphere

Exercises

1 A. Question

What is the Biosphere?

Answer

Earth is the only planet which has various forms of life on it no other planet has a life.

The word biosphere made of two words bio+ sphere. Bio means life and Sphere means around or surface. It has evolved over many years and life has also evolved with it. The environmental conditions limit's the zone in which the organisms live. This narrow zone which allows the life the flora and fauna are called Biosphere.

1 B. Question

Define ecology.

Answer

Ecology is the branch of biology that deals with the relations of organisms to one another and to their physical surroundings. Term ecology is derived from the Greek word oikos which means house or living relations, so the study of living relations is called ecology.

It helps us understand about life, adaptation, distribution of living animals on earth, movement of material and energy, development of ecosystem etc.

Study of ecology in a deep way can help us in many ways like- conserving nature, saving a specific species, community health etc, so we can say that study of ecology is important for the survival of human being on earth.

1 C. Question

Name the different types of environmental pollution.

Answer

Environmental pollution is described as 'an additive or excessive addition to certain materials to the physical environment, making it less fit or unfit for life.'

Different types of environment pollutions are:

- Air pollution

- Water pollution
- Land pollution
- Noise pollution
- Thermal pollution
- Radioactive pollution

1 D. Question

What are the measures to control water pollution?

Answer

Addition of certain substances to the water such as organics, inorganic, biological, radiological etc. that degrades the quality of water and makes it unfit for use is called water pollution.

Measures were taken to control water pollution involve:

- Treatment of sewage water and the industrial effluents should be done before releasing into the water bodies.
- Domestic cleaning in tanks, streams, and rivers, which supply drinking water, should be prohibited.
- Excessive use of fertilizers and pesticides should be avoided.
- Water hyacinth (an aquatic weed) can purify water by taking some toxic materials and a number of heavy metals from water.
- Oil spills in water can be cleaned with help of bregoli.
- Many other governmental programmes like sewage management and water restoration can also help to control water pollution.

1 E. Question

What is Bio-diversity?

Answer

Biodiversity means the diversity of life in all its forms the diversity of species, of genetic variations within one species, and of ecosystems. Humans can't survive on earth without rich biodiversity because our life is related to diversity in many ways. Millions of species distributed around the earth and they have different characteristics because they are different from other species. Diversity helps us survive on earth and makes species different from others. It has three types-

1. Genetic diversity- diversity within species
2. Species diversity- a variety of species within a habitat or region

3. Ecological diversity- variation in the ecosystems found in a region or the variation in ecosystems over the whole planet.

Note: Biodiversity on earth is highest in tropics or low latitudes and lowest on poles.

2 A. Question

Define the following:

Biosphere

Answer

A narrow zone which allows the life of flora and fauna in the environment is called biosphere.

2 B. Question

Define the following:

Ecological imbalance

Answer

Ecological imbalance is when a natural or human cause disturbance disrupts the ecological balance of the ecosystem. E.g. Volcanic eruption and flood.

2 C. Question

Define the following:

Global warming

Answer

Global warming is an average increase in the temperature of the atmosphere near the earth's surface and in the troposphere, which can contribute to changes in global climate patterns. It is the result of increased emissions of greenhouse gases from human activities.

2 D. Question

Define the following:

Greenhouse effect

Answer

The green house effect is a naturally occurring phenomenon that blankets the earth lower atmosphere and warms it, maintaining the temperature suitable for living things to survive.

2 E. Question

Define the following:

Ozone depletion

Answer

Ozone is a natural gas; it is an allotrope of oxygen consisting of three atoms of oxygen bound together in a non-linear fashion. The equilibrium between the formation and destruction of ozone has been upset by the influx of several substances into the atmosphere which reacts with and destroys it. The significant decrease in the concentration of ozone in a particular region of the atmosphere is called 'ozone depletion'.

2 F. Question

Define the following:

Acid rain

Answer

Acid Rain is the rainfall that has been acidified when oxides of sulfur and nitrogen react with the moisture in the atmosphere. It is rain with a pH of less than 5.6. It is particularly damaging to lakes, streams and forest and the plants and animals that live in the ecosystem.

3 A. Question

Terms to remember:

Pollution –

Answer

Addition of excessive foreign materials to the physical environment, making it less fit or unfit for life is called as pollution.

3 B. Question

Terms to remember:

Environmental Day –

Answer

Environment Day is a campaign celebrated every year on the 5th of June. This day especially focuses on the current environment conditions to make the environment better. It is to promote people to change their attitude toward the environment for making a safe future. The theme of World Environment Day this year was "Beat the Plastic".

3 C. Question

Terms to remember:

Climate change –

Answer

Climate change means a change in climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed of comparable time periods. Climate change is usually measured in major shifts in temperature, rainfall, and snow and wind patterns lasting decades or more.

3 D. Question

Terms to remember:

Chlorofluorocarbons (CFC) –

Answer

They are a form of hydrocarbons that contain carbon, chlorine, and fluorine. They were extensively used as refrigerants, propellants, and solvents. Due to their contribution to ozone depletion in the upper atmosphere, the manufacture of such compounds which depletes ozone has been phased out or in the process to phase out under Montreal Protocol.

3 E. Question

Terms to remember:

Earth Hour and Earth Day –

Answer

● *Earth Day* is celebrated on April 22nd of every year. It is a day of civic participation and political action towards the earth's changing condition. The theme of this year's earth day was 'end plastic pollution'.

● *Earth Hour* is a movement started by a world wild fund for nature. The event is held annually encouraging individuals, communities, and businesses to turn off non-essential electric lights for one hour, from 8:30 to 9:30 pm on a specific day towards the end of March, as a symbol of commitment to the planet. This year it was held on March 24th.

3 F. Question

Terms to remember:

'Save Earth' –

Answer

Save earth is a slogan used to spread awareness among people about the importance of earth and why we should save our mother earth. Save earth

slogan motivates people to save the earth and its natural resources to give our future generations a safe and healthy environment.

4. Question

Collect information on the impact of global warming. Also, enlist the ways of controlling global warming.

Answer

Impacts of Global Warming

- 1) Rise in sea level.
- 2) Changes in rainfall patterns.
- 3) Increase the likelihood of extreme events such as heat wave, flooding, and hurricanes.
- 4) Melting of ice caps.
- 5) Melting of glaciers.
- 6) Widespread vanishing of the animal population due to habitat loss.
- 7) The spread of disease.
- 8) Bleaching of coral reefs.
- 9) Loss of planktons due to warming of seeds.

Ways of controlling Global Warming.

- 1) Use of low carbon energy technologies.
- 2) Enhancing carbon sinks* through reforestation.
- 3) Reducing the green house gas emissions.
- 4) Use of renewable energy sources.
- 5) Including climate action plan or policies that cut the use of green house gases.

*Carbon Sink – It is a natural or artificial reservoir which absorbs carbon from the atmosphere through physical or biological mechanisms for example forests, oceans, and soil.