Natural Resources

14 Chapter

1. How is our atmosphere different from the atmospheres on Venus and Mars?

Ans: The composition of Earth's atmosphere differs from that of Venus and Mars. The atmosphere of the Earth is composed of nitrogen, oxygen, a trace of carbon dioxide, water vapour, and other gases. This allows for the existence of life on Earth. However, carbon dioxide makes up the majority of the atmosphere on Venus and Mars, which could range between 95 to 97 percent.

2. How does the atmosphere act as a blanket?

Ans: The atmosphere keeps the temperature of the Earth constant. It avoids a sudden increase in the temperature during the daytime due to the sun. It blocks or slows down the escape of heat from the Earth into outer space during the night-time.

3. What causes winds?

Ans: The uneven heating of the Earth's surface causes winds. When air is heated, it becomes lighter and rises in the atmosphere. As a consequence, a low-pressure area is formed. The air then travels from a high-pressure area to a low-pressure area, creating wind.

4. How are clouds formed?

Ans: Due to the heat of the sun, a huge volume of water evaporates from various water bodies during the day and rises into the air. The air in the atmosphere heats up as a result of this. When water vapour-carrying air rises, it expands and cools. Water droplets develop as a result of the condensation of water vapour. Clouds arise as a result of the production of water droplets.

5. List any three human activities that you think would lead to air pollution.

Ans: Three human activities that would lead to air pollution are deforestation, automobile emissions, and industrialisation all contribute to the combustion of fossil fuels.

1. Why do organisms need water?

Ans: Organisms need water as all the cellular processes need water as a medium. Also, the transportation of substances require water

2. What is the major source of freshwater in the city/town/village where you live?

Ans: The major source of freshwater in the city/town/village is the River.

3. Do you know of any activity which may be polluting this water source?

Ans: Discharge of wastewater from houses, industries, hospitals, etc. pollutes freshwater sources.

1. How is soil formed?

Ans: Various processes and factors help in the formation of the soil. The major plays by the sun, water, wind, and living organisms in soil formation.
Sun: During the day, the sun warms rocks, causing them to expand. These rocks cool and contract throughout the night. Since all parts of the rock do not expand and contract at the same rate, this causes the formation of cracks which lead to the breaking up of huge rocks into smaller pieces.

Water: Water contributes to soil formation in two ways. Water pours through the cracks in the rocks caused by the sun's heat. When this water freezes, it results in an increase in volume. As a result, the size of the holes grows as well. The weathering of rocks is helped by this. Hard rocks are worn away over time by flowing water. Large and tiny rock fragments are frequently carried downstream by fast-moving water. These rocks scrape against one other, causing the rocks to crumble. Running water carries these smaller particles away and deposits them along its course.

Wind: Strong winds move rocks away, causing them to rub together. As a consequence, rocks are broken down into smaller and smaller bits.

Living organisms: Some organisms for example, Lichens, help in the development of soil. Lichens can also be found on rocks. Lichens emit specific chemicals during their development, which cause the rock surface to powder down, creating a thin coating of soil. Other tiny plants, such as moss, can now grow on this surface, causing the rock to break apart even further. The roots of large trees can occasionally become caught in cracks in the rocks, and as the roots get larger, the crack expands.

2. What is soil erosion?

Ans: Soil erosion is defined as when the top layer of soil is washed away from the ground surface by wind or water.

3. What are the methods of preventing or reducing soil erosion?

Ans: Soil erosion can be avoided by afforestation, various agricultural practices that prevent topsoil removal, and grass overgrazing, among other things.

1. **What are the different states in which water is found during the water cycle?**

Ans: During the water cycle, water is found in solid-state as snow, ice, etc., in a liquid state as groundwater, river water, etc., and in a gaseous state as water vapour.

2. **Name two biologically important compounds that contain both oxygen and nitrogen.**

Ans: Amino acids DNA and RNA are two biologically important compounds that contain both oxygen and nitrogen.

3. **List any three human activities which would lead to an increase in the carbon dioxide content of the air.**

Ans: Three activities that increase the amount of carbon dioxide in the atmosphere are:

1. Emission from the vehicles
2. Burning of fossil fuels
3. Forest fires due to human activities, deforestation.

4. What is the greenhouse effect?

Ans: A rise in the amount of methane, carbon dioxide, nitrous oxide etc. in the atmosphere would cause the average temperature to increase on a global level. This is called the greenhouse effect.

5. What are the two forms of oxygen found in the atmosphere?

Ans: A diatomic molecular form (O2) and a triatomic molecular form (O3) of oxygen are present in the environment (O3 known as ozone).

1. Why is the atmosphere essential for life?

Ans: The atmosphere maintains the Earth's average temperature fairly constant throughout the day and even throughout the year. During daytime hours, the atmosphere prevents a rapid rise in temperature. It reduces the amount of heat that escapes into space throughout the night. The atmosphere is necessary for life for all of these reasons.

2. Why is water essential for life?

Ans: In a water medium, all cellular activities take place. All of the processes that occur within our bodies and cells take place between chemicals that are dissolved in water. Dissolved substances are transferred from one region of the body to another. As a result, organisms must maintain a constant amount of water within their bodies in order to survive.

3. How are living organisms dependent on the soil? Are organisms that live in water totally independent of soil as a resource?

Ans: All living organisms are dependent on soil. Certain organisms rely on each other directly, while others rely on each other indirectly. Plants require soil to acquire nutrients and support. On the other hand, organisms depend on plants for food which is essential for life. Carnivores feed on animals, which in turn rely on plants for food, whereas herbivores feed on plants directly. As a result, they are indirectly dependent on soil. Water-dwelling organisms are not totally dependent on the soil as a source of food. Minerals are required for the survival of aquatic plants. Rivers, rains, and other natural processes transport these minerals from the soil to aquatic bodies. Aquatic life is hard to envisage without the flow of minerals from the land to the water bodies.

4. **You have seen weather reports on television and in newspapers. How do you think we are able to predict the weather?**

Ans: Temperature, humidity, rainfall, wind speed, and other weather variables are collected by the meteorological department. These data are collected using various instruments. A thermometer known as a maximum-minimum thermometer is used to determine the day's maximum and lowest temperatures. The rain gauge is a device that measures the amount of rain that falls. Anemometers are used to measure wind speed. Humidity is measured using a variety of devices.

5. **We know that many human activities lead to increasing levels of pollution of the air, water- bodies and soil. Do you think that isolating these activities to specific and limited areas would help in reducing pollution?**

Ans: Yes, limiting human activity to restricted regions will undoubtedly aid in pollution reduction. For instance, Industries that are set up in the isolated regions will not contaminate the water resource, fertile land and agricultural land. To some extent, these methods will reduce pollution.

6. **Write a note on how forests influence the quality of our air, soil and water resources.**

Ans: Forests have a variety of effects on all-natural resources. The below are a few examples. They keep the quantity of $$CO_2$$ and oxygen in the atmosphere in check. Forests help to minimize soil erosion by retaining the fertile soil in place with their roots. Forests contribute to the recovery of water supplies. Plants lose water through transpiration, which then condenses to produce clouds. These clouds produce rain, which replenishes water bodies.