In-text Question 1.1 Page No: 193

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

Ans:

The Earth's atmosphere is composed of various gases like oxygen, carbon dioxide, nitrogen, and water vapour, along with various gases in small quantities, hence making it a balanced and livable than other planets. Planets like Venus and Mars have more than 95% of carbon dioxide in the air making the existence of life impossible.

2. How does the atmosphere act as a blanket?

Ans:

⇒ It maintains consistency in temperature throughout the day, making it a comfortable place to stay.

⇒ The ozone in the atmosphere is responsible for maintaining the temperature without letting the harmful ultraviolet ray affect it.

3. What causes winds?

Ans:

The uneven heating of the earth's surface is the main cause of winds. On being further heated, the air rises up, and low pressure is created. Hence, the air in high pressure occupies the low-pressure region causing the wind.

4. How are clouds formed?

Ans:

During the day time, in the presence of sunlight, water from sources like well, lakes, ponds, seas, rivers and various other sources gets evaporated. Water vapour rises up with the hot air. At a particular height, the air cools, and the water vapour condenses to form minute droplets to form clouds.

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

Ans:

⇒ Burning of fuels like petroleum, kerosene, and coal in the atmosphere.

⇒ The smoke released from manufacturing industries.

⇒ The smoke emitted from vehicles.

In-text Question 1.2

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1. Why do organisms need water?

Ans:

⇒ Every cellular process needs water.

⇒ Photosynthesis in plants.

⇒ Transportation of substances in the body takes place through water by dissolving the contents in water.

⇒ Required minerals are transported in terrestrial animals through water, and even to eliminate waste from the body, water is used.

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

Ans:

⇒ Rainfall

⇒ Underground water from wells

⇒ Water sources like ponds, rivers, and lakes

⇒ Snow

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

Ans:

⇒ Dumping waste in the river

⇒ Factory waste

⇒ Sewage

In-text Question 1.3

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

Ans:

Water is found in all three states, like

⇒ A solid-state (Snow, ice)

⇒ Liquid state (river water, underground water)

⇒ Gaseous state (water vapour)

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

Ans:

⇒ DNA (Deoxyribonucleic Acid)

⇒ RNA (Ribonucleic Acid)

⇒ Amino acids

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

Ans:

⇒ Breathing process where carbon dioxide is released

⇒ Burning of petrol, coal, and fuel

⇒ Using fridge, air conditioners and oven

4. What is the greenhouse effect?

Ans:

Gases like carbon dioxide and methane trap the sun's radiation and do not allow it to go back. This causes the warming of the atmosphere, resulting in the greenhouse effect.

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

Ans:

Oxygen is present in two forms, and they are

⇒ Diatomic molecular form (O_2)

⇒ Triatomic molecular form (O_3)

Exercise Questions 1.1

1. Why is the atmosphere essential for life?

Ans:

⇒ The atmosphere is constituted of various main gases like O_2, N_2, and CO_2, which are the basis of living of microorganisms, plants and animals.

⇒ Photosynthesis is due to the earth's atmosphere.

⇒ The constant temperature of the earth is the cause of the earth's atmosphere.

⇒ Processes like respiration, burning, and combustion are due to the atmosphere.

⇒ The atmosphere is the main reason to restrict UV rays into the earth.

2. Why is water essential for life?

Ans:

⇒ All the biological activities, such as respiration, digestion and other biological reactions, are supported by water.

⇒ Living beings are composed of more than 70% of water.

⇒ Transportation of substances from one form to another takes place due to the presence of water.

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 on the earth, directly or indirectly, are dependent on soil for a living. Plants obtain water and minerals through the soil and prepare their food. Other living organisms that live in water are not totally independent of soil because the microbes growing on the soil in water are the primary producers. Primary producers are the main and chief element of the food chain. Various microbes found in soil help in the decomposition of dead plants and animals in water, which helps in returning the nutrients and elements back to the water.

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

Ans:

Weather is studied as the collection of various elements, like high and low temperatures, humidity, rainfall, wind speed and more, using various figures and facts with relevant instruments. Hence, we are able to forecast the weather, on the basis of the data collected by the meteorologists.

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:

Human activities are the main reason for the pollution of the air. Air is the medium to spread pollutants into various sources like water and soil. Hence, we can say that limiting activities in certain places will definitely help air pollution to be controlled to some extent.

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

Ans:

Air:

- Forests help in purifying the air by absorbing all kinds of pollutants.
- Forests help in increasing the oxygen level in the air by absorbing carbon dioxide during photosynthesis.
- Transpiration helps to maintain the temperature of the surroundings and helps in the formation of clouds.

Soil:

- Plants in forests hold the soil, thereby preventing soil erosion.
- Adds nutrients to the soil as a lot of vegetation present in the forest gets decomposed.

Water:

- Forest helps in bringing rain and increasing the level of water in underground levels