

**Chapter – 14 Natural Resources**

**Class 9 Science NCERT Textbook – Page 193**

**Q1. How is our atmosphere different from the atmosphere on Venus and Mars?**

**Answer:**

On Venus and Mars planets, the carbon dioxide is the major component which is 95-97% of the atmosphere so, there is no existence of life. On earth, air forms the blanket of nitrogen, oxygen, carbon dioxide, argon and trace of other gases, so it has life on it.

**Q2. How does the atmosphere acts as a blanket?**

**Answer:**

Earth's atmosphere spreads from its surface to a height of upto 1000 km, beyond this it combines with solar atmosphere.

Earth's atmosphere is a protective blanket for the existence of organisms which keeps the average temperature of the earth fixed in the day and whole year.

**Q3. What causes winds?**

**Answer:**

Wind is the movement of air from one region to another. When solar radiations fall on the earth, some are absorbed and rest is reflected back or reradiated by the land and water bodies. These reflected or reradiated solar radiations heat up the atmosphere. So, there is Convection currents in the air over water bodies As, land heat up faster than water, the air above the land gets heated faster than the air over water bodies.

**Q4. How are clouds formed?**

**Answer:**

When water is heated with sunlight during the day, a large amount of water evaporates and goes in the air.

The air with water vapours also gets heated. The hot air rises up with water vapours As air raises, it expands and cools which causes water vapours in the air to condense as tiny droplets.

These water droplets slowly grow bigger by the condensation of more water droplets which appear as clouds. When the droplets grow big and heavy, they fall down in the form of rain.

**Q5. List any three human activities that you think would lead to air pollution.**

**Answer:** Three human activities that we think would lead to air pollution is,

1. Burning of fossil fuels in automobiles, generators, thermal power plants.
2. Smoke from industries and factories.
3. Burning of wood and dung cakes in household cooking.

**Q6. Why do organisms need water?**

**Answer:**

Organisms need water as it plays a vital role in the biochemical reactions in cells and body of organisms. Water acts as a solvent or a medium for the chemical reactions to occur. So, it is essential for the organisms to maintain a distinct level of water to stay alive.

### **Class 9 Science NCERT Textbook – Page 194**

**Q1. Why do organisms need water?**

**Answer:** Organisms need water for the following activities:

- (1) All cellular and biochemical processes.
- (2) Transportation of materials takes place by dissolving in water.
- (3) Terrestrial animals need fresh water to transport minerals and remove waste from the body.

**Q2. What is the major source of fresh water in the city/town/village where you live?**

**Answer:** In city /town/ village the major source of fresh water is underground water. For examples: hand pumps, tube wells and borewells

**Q3. Do you know of any activity which may be polluting this water source?**

**Answer:** Following activities are polluting the water bodies:

- a. Release of sewage
- b. Release of industrial wastes.

- c. Washing clothes and bathing animals.
- d. Acid rain and oil pollution.

### **Class 9 Science NCERT Textbook – Page 196**

#### **Q.13 How is soil formed?**

**Answer:** Soil is formed by breaking of rocks on Earth surface by different physical, chemical, and biological processes with various factors like sun, water, wind, and living organisms.

#### **Q.14 What is soil erosion?**

**Answer:** Soil erosion is the natural process in which physical sources like wind and water carry away the top soil.

#### **Q.15 What are the methods of preventing or reducing soil erosion?**

**Answer:** Preventive methods of soil erosion:

- (i) Afforestation is the process of planting trees to decrease soil erosion.
- (ii) Contour Ploughing land in furrows on the natural land slope helps to conserve water and prevent the washing away of top soil.

### **Class 9 Science NCERT Textbook – Page 201**

#### **Q1. What are the different states in which water is found during the water cycle?**

**Answer:** Water has three different states in water cycle, they are:

1. Gaseous state of water is water vapour. It evaporates from the surface of water bodies and mixes with air called evaporation.
2. Liquid state of water forms rain when water vapour condenses in the atmosphere and falls on the earth as rain called condensation.
3. Solid state of water is due to freezing of liquid droplets in atmosphere which form snow hail and sleet called precipitation.

#### **Q2. Name two biologically important compounds that contain both oxygen and nitrogen.**

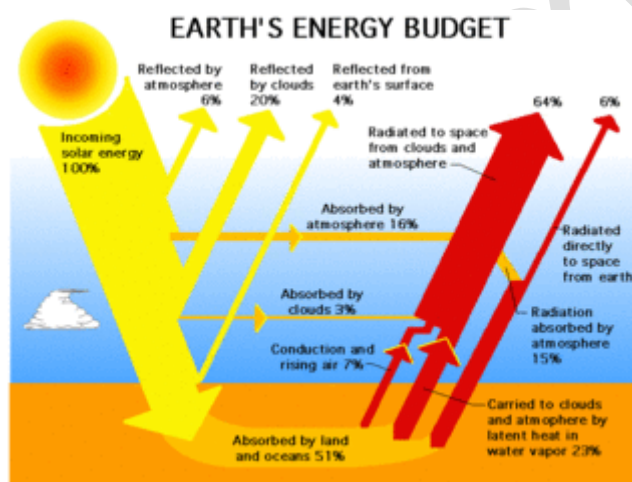
**Answer:** Nucleic acids and proteins are two biologically important compounds that contain both oxygen & nitrogen.

**Q3. List any three human activities which would lead to an increase in the carbon dioxide content of air.**

**Answer:** Human activities such as burning of oil, coal, natural gas and deforestation are the primary reason of increased carbon dioxide in air.

**Q.4. What is the greenhouse effect?**

**Answer:** The greenhouse effect is the trapping of the sun's heat in the atmosphere by gases. The greenhouse effect is due to greenhouse gases like carbon dioxide, methane and water vapour.



**Q5. What are the two forms of oxygen found in the atmosphere?**

**Answer:** Oxygen is called diatomic oxygen and ozone is known as triatomic oxygen.

### **Class 9 Science NCERT Textbook – Page 201 and 202 (Exercise)**

**Q1. Why is the atmosphere essential for life?**

**Answer:**

- Atmosphere helps sunlight to reach the earth which affects climate and is a reservoir of many elements which are essential for life.
- Oxygen is essential for living beings for respiration and burning of materials.
- Air contains 20% oxygen which is balanced by the process of photosynthesis.

- d) Ozone of atmosphere prevents penetration of ultraviolet light of solar radiations to reach the earth as it affect the living beings, for example the UV rays cause skin cancer in human beings.

**Q2. Why is water essential for life?**

**Answer:**

Water is essential part of our life due to following reasons:

1. Water is the medium of life.
2. Life is created in the presence of water.
3. Human tissues have 20% water in the bone cell and 85% in brain cells.
4. All biochemical reactions of a cell occur due to water.

**Q3. How are living organism's dependent on the soil? Are organism that live in water totally independent of soil as a resource?**

**Answer:**

The top layer of earth help to support plant life with the help of soil. Soil is a complex mixture of minerals - 45%, organic matter – 55%, water – 25%, air – 25% and living organisms.

Plants depend on the soil for minerals, water and air.

Animals depend on plants for food and other animals like carnivores depend on herbivores.

So, all the living organisms depend on the soil directly or indirectly.

But the aquatic organisms are not entirely dependent on soil as a resource.

**Q4. You have seen weather reports on television and in newspaper. How do you think we are able to predict the weather?**

**Answer:**

The daily information of weather are recorded by the meteorological departments which is publicised in television and newspaper. Information of speed of wind, average minimum and maximum temperature, relative humidity, forms of cloud formation, depression zones on an area etc., are recorded with the help of instruments and displayed on television, published in newspaper or broadcast on the radio.

The information given by meteorological department help to predict the weather conditions daily.

**Q5. We know that many human activities lead to increase levels of pollution of air, water bodies and soil. Do you think that isolating these activities to specific and limited areas would help in reducing pollution?**

**Answer:**

Human activities increase the levels of pollution of the air, water bodies and soil. Controlling these activities to specific and limited areas help to reduce air, water and soil pollution.

Air pollution is responsible for global environmental changes such as

- i) Acid rains.
- ii) Global warming due to increased concentration of green house gases in the atmosphere.
- iii) Ozone layer depletion.

Water move in streams, rivers and oceans and distributes wastes to all places.

Underground water pollution is due to sewage, industrial wastes and agriculture percolation.

**Q6. Write a note on how forest influence the air, soil and water resources.**

**Answer:**

1. Forest is area covered with trees and other plants like shrubs and grasses and are renewable natural resource:

- 2. Forest form natural environment with factors like temperature, humidity and precipitation.
- 3. Forest form soil environment by affecting its composition, structure, the chemical properties, water contents etc.
- 4. Forest maintain the level of carbon dioxide and oxygen in the atmosphere.
- 5. Roots of the forest plants bind the soil and prevent erosion of by fast winds or fast-moving water.
- 6. Forest controls flood, landslides and shifting of sand and silting of rivers.