

## Natural Resources

Why is the atmosphere essential for life?

**Solution:**

The atmosphere is essential for life for the following reasons:

Life-sustaining gases like oxygen and carbon dioxide, along with other gases and water vapour, from the atmosphere.

- (i) Air is a bad conductor of heat and maintains the temperature. If the temperature on the earth rises suddenly, it may threaten the existence of life.
- (ii) It prevents heat from escaping into outer space during nights.

Why is water essential for life?

**Solution:**

- (i) Living organisms are made up of cells. Cell cytoplasm consists of about 90% of water.

Water, being a universal solvent, accommodates all types of organic or inorganic molecules and makes them readily available for various metabolic activities continuously occurring in living cells. It is essential for transportation of substances from one place to another inside the cell.

- (ii) Thus, water is essential for cells, and hence, for life.

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

**Solution:**

Living organisms directly or indirectly depend on soil. Herbivorous animals depend on green plants for their food and energy requirements.



Carnivorous animals depend on herbivorous animals. Plants depend on soil as they obtain nutritive elements from soil for making their food.

(i) Plants obtain water from soil. Soil also helps them in standing erect and prevents them from being blown away by winds.

(ii) It is not true to say that organisms living in water are totally independent of soil, because they also depend on green plants for their food and energy requirements in one way or the other. Plants, in turn, are dependent on soil for water and minerals. So, it can be said that all living organisms, whether aquatic or terrestrial, directly or indirectly depend on soil.

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

**Solution:**

The prediction of weather is done on the basis of surface weather observations like atmospheric pressure, temperature, wind speed and direction, humidity and precipitation. This, in turn, helps in predicting about rains and other weather related information. It helps in finding low or high air pressure areas. In India, most of the rains are due to the south-west monsoon or the north-east monsoon.

**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?**

**Solution:**

Human activities play a major role in increasing pollution. However, by limiting these activities to a certain area, pollution cannot be reduced. Air, water and soil are natural resources that are interested. They cannot be limited to a certain area. Air is pollutants with the rise in the level of CO<sub>2</sub> and other air pollutants. These air pollutants are carried to other places by winds. Toxic substances get dissolved in water and water bodies. This causes the death of aquatic life forms. This affects the food chain and food web. In the same way, soil pollution leads



to a decrease in soil fertility and soil erosion, which, in turn, leads to low productivity. So, by limiting different human activities to specific areas, the problem of pollution cannot be solving.

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

**Solution:**

Forests influence all the three sources like air, water and soil.

(i) Forests maintain the balance between carbon dioxide and oxygen levels in the atmosphere.

(ii) Forests prevent soil erosion. The roots of trees hold the soil tightly and prevent it from blowing away by wind and water.

(iii) Forests are also essential for recharging water sources. They play an important role in maintaining the water cycle by transpiration. They also help in the cycling of underground and surface water.

In this way, forests affect the quality of air, soil and water.

