

**Exercise :8 B****Why does rain water have p<sup>H</sup> less than 7?****Solution:**

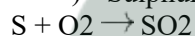
Carbon dioxide in the atmosphere combines with rain water to give carbonic acid which is acidic in nature. Hence the P<sup>H</sup> of the rain water is acidic in nature.

**1. pH of acid rain is sometimes as low as 2.****Solution:**

PH of rain water is neutral in nature but when rain comes rain water combine with Carbon dioxide in the atmosphere to form carbonic acid which reduces the P<sup>H</sup> of rain water from 3.5 – 5.6 which sometime may reach as low as 2.

**2. Explain the formation of acid rain due to:****1. Oxides of sulphur****2. Oxides of nitrogen****Solution:**

a) Sulphur dioxide and Sulphur trioxide react with water to form H<sub>2</sub>SO<sub>4</sub> which causes acid rain .



b) Nitrogen dioxide combines with water to form mixture of nitrous acid and nitric acid which causes acid rain.

**3. What are the causes of acid rain?****Solution:**

Formation of mineral acids such as carbonic acid, nitric acid, nitrous acid and Sulphuric acid and their mixture with rain is the main cause of acid rain.

**4. Give the impact of acid rain:**

1. on plants
2. on soil
3. on water bodies

**Solution:**

Impact on acid rain are as follows

- 1) Acid rain causes nutrient loss and causes damage to leaves.
- 2) Acid rain results in calcium and potassium loss from soil which affects the soil fertility.
- 3) Acid rains make the water acidic which will affect the aquatic life adversely.

**5. How does a scrubber help in reducing the formation of acid rain?**

**Solution:**

The impact of acid rain can be reduced by checking the root cause of acid rain, i.e. by reducing the emission of oxides of sulphur and nitrogen. This can be done by using coal or oil with low sulphur content. We can also reduce such emissions by using a scrubber, a device that absorbs gaseous pollutants. A scrubber used for removing sulphur dioxide from a smoke stack usually consists of a fine spray of water and gas rising from the - stack, which is passed through the scrubber, when water absorbs sulphur dioxide. Thus the formation this constituent of acid rain is reduced.

