

Chapter: Environmental Chemistry

Pollution

Question 1

What are CFCs?

Ans.

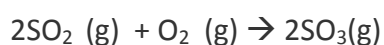
CFCs are chlorofluorocarbons. These are man-made industrial chemicals used in air conditioning etc, and are damaging the ozone layer.

Question 2

How particulate matter affects air pollution?

Ans.

The presence of particulate matter in polluted air catalyses the oxidation of sulphur dioxide to sulphur trioxide.



Question 3

What are the major gaseous pollutants?

Ans.

The major gaseous and particulate pollutants present in the troposphere are:

Gaseous air pollutants: These are the oxides of sulphur, nitrogen and carbon, hydrogen sulphide, hydrocarbons, ozone and other oxidants.

Particulate pollutants: These are dust, mist, fumes, smoke, smog etc.

Question 4

What are the harmful effects of acid rain?

Ans.

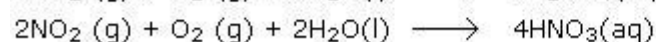
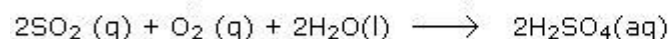
Acid rain is harmful for agriculture, trees and plants as it dissolves and washes away the nutrients needed for their growth. It causes respiratory ailments in human beings and animals. When acid rain flows as ground water it affects plants and animal life in aquatic ecosystem. It corrodes water pipes resulting in the leaching of heavy metals as iron, lead into the drinking water. Acid rain damages the building and structures made of stone or metal.

Question 5

What are the major contributors to acid rain?

Ans.

SO_2 and NO_2 after oxidation and reaction with water are the major contributors to acid rain, as polluted air contains particulate matter that catalyse the oxidation.



Question 6

How the global warming can be reduced?

Ans.

Global warming can be reduced by minimizing the use of automobiles and growing more plants.

Question 7

Why carbon monoxide is poisonous?

Ans.

Carbon monoxide binds to hemoglobin to form carboxyhemoglobin that is 300 times more stable than the oxygen-hemoglobin complex. In blood when the concentration of carboxyhemoglobin reaches 3-4 percent the oxygen carrying capacity of blood is reduced. This oxygen deficiency results in different disorders.

Question 8

What is acid rain?

Ans.

When acid from the atmosphere is deposited on the earth's surface it is known as acid rain. When pH of the rain water drops below 5.6 it is called as acid rain.

Question 9

What are the different types of smog?

Ans.

There are two types of smog. These are: Classical and Photochemical smog. Classical smog occurs in cool humid climate. It is a mixture of smoke, fog and sulphur dioxide. It is also called as reducing smog. Photochemical smog occurs in warm, dry and sunny climate. The main components of the photochemical smog result from the action of sunlight on unsaturated hydrocarbons and nitrogen oxides produced by automobiles and factories. Photochemical smog is also called as oxidising smog.

Question 10

What is smog?

Ans.

The word smog is derived from smoke and fog and is the most common example of air pollution.

Effects of pollution

Question 1

Which reagent is used for the bleaching of paper to reduce the environmental pollution?

Ans.

Green chemistry is cost effective approach. Hydrogen peroxide with suitable catalyst is used to bleach paper.

Question 2

How green chemistry can be used in day-to-day life?

Ans.

Hydrogen peroxide is used to bleach clothes in laundry with no contamination of the ground water, and this process of dry cleaning of clothes is an example of green chemistry application in day-to-day life.

Question 3

What are the strategies for controlling environmental pollution?

Ans.

