

Environmental Science Question

Question from ~~2018~~ 2019

~~Q) Explain~~

Q) What are the five major air pollutants coming out of fire burning process? Smog formation occurs due to certain air pollutants. What means and ways can be used for its control?

Q₂)

Ans)

Air Pollutants:

Any substance that is harmful for health and environment and reduce the quality of air is called air pollutants.

Major Air Pollutants Coming out from Burning Process

major air pollutants that are coming out from burning process are addressed as under:

1. Carbon dioxide (CO_2)

One of major air pollutants that are coming from burning process is called Carbon dioxide (CO_2). It is caused by emission of gases from industries, smoke from traffic, burning of fossil fuels, and burning of forests.

2. Methane (CH_4)

Similarly, Methane is caused by burning of coal, heating and cooking food, and burning of organic fuels.

3. Nitrogen Oxide (NO)

likewise, Nitrogen oxide is coming out from burning of fossil fuels.

4. Sulphur dioxide (SO_2)

Sulphur dioxide (SO_2) is also produced by burning of coal, gas and fuels.

5. Carbon monoxide (CO)

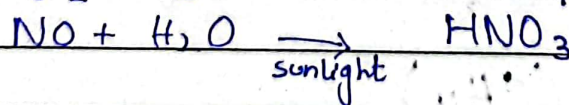
Carbon monoxide (CO) is also produced by burning of waste, incomplete combustion of carbon in liquid and oxidation process in industries.

Formation of Smog:

Smog is the mixture of smoke and fog, that reduce the visibility and cause health problems.

Smog is formed by the mixture of Sulphur dioxide (SO_2) or Nitrogen oxides (NO_x) and water vapour (H_2O)

Formula:



Air Pollutants in Smog Formation

Air pollutants in smog formation depends on its type. Smog is categorized into two types

① Industrial Smog

② Photochemical Smog

1. Air Pollutants in Industrial Smog

Industrial smog is also known as 'London smog' which is caused by burning coal and other fossil fuel. The key pollutants are:

1. Sulphur dioxide (SO_2)
2. Particulate Matter (PM)

2. Photo Chemical Smog

Photo Chemical Smog is also called brown smog. The key pollutants in photo chemical smog are:

1. Ozone (O_3)
2. Volatile Organic Compounds (VOCs)
3. Nitrogen Oxides (NO_x)

Mitigation Strategies to Control Smog:

The means and ways to control smog are followed as under:

1. Renewable Energy:

By using renewable energy sources, the industrial smoke can be reduced and ultimately it will reduce smog.

2. Forestation:

Forestation and reforestation can make big impact on carbon cycle.

and it will reduce Carbon dioxide (CO_2).

3. 3Rs - Recycle, Reduce, and Reuse

The 3Rs method which is recycle, reuse and reduce can help to reduce waste that is causing methane by burning and also reduce carbon.

4. Public Transport can Reduce Smoke:

Public transport will reduce the number of vehicles on the roads that it will reduce smog.

5. Less Consumption of Goods

Less consumption will reduce the air pollution by reducing industries smoke that will reduce smog.

Case Study of Beijing's Battle Against Smog

Smog and air pollution was the biggest problem for Beijing, China. Beijing was on the top of AQI index. However they follow some steps to control smog. The steps are follows:

1. Waste management
2. Public Engagement in Environmental

Problems

3. Modernizing the bus transport fleet
4. Shutting down coal industries
5. New Energy Vehicles (NEVs) introduction.