Air Pollution

Definition:-

- Air Pollution is a mixture of solid particles and gases in the air. Car emission chemical from factories, dust, pollen and mold spores may be suspended as particles.
- Ozone a gas is a major part of air Pollution in cities.
- When Ozone forms air Pollution it's also called smog.

Type of Air Pollutions:-

The most common and harmful Pollutant outdoors include:-

1. Particulate matter
2. Nitrogen dioxide
3. Ozone
4. Sulphur dioxide

(1)Particulate matter:- Particulate matter is a mix of solid and liquids including carbon complex organic chemicals, sulphates, Nitrates, Mineral dust, and water suspended in the air.

(2)Nitrogen dioxide:- Nitrogen dioxide is a gas and is a major component of urban air Pollution episodes

(3) Ozone:- Ozone is a gas composed of 3atoms of Oxygen. It the upper level of the earth's atmosphere. It absorbs harmful ultraviolet radiation.

(4) Sulphur dioxide:- So2 is a colorless gas with a pungent, suffocating smell. It's produced by burning Sulphur containing fuels such as Coal and Oil. This includes vehicles, power generation and heating.

Caused of Air Pollution:-

- It caused by solid and liquid particles and certain gases that are suspended in the air. These Particles and gases can come from car, truck exhaust, factors, dust and wildfire.
- It solid and liquid particles suspended in our air are called Aerosol.

Effect of Air Pollution on environmental:-

Air Pollution can damage crops and trees in a variety of ways. Ground level Ozone can lead to reductions in agricultural crops and commercial forest yields reduced growth and survivability of tree seedlings and increase plant susceptibility to decrease pests and other Environmental stresses.

Monitoring and control of Air Pollution:-

Monitoring is an exercise to measure ambient air Pollution levels in an area.

The date will indicate the status of the quality of air we breathe.

The date over a long term allows us to tease out patterns that help support air Pollution control.

Control measures techniques:- Some effective techniques to control air Pollution are as follow:-

A) Source Correction Methods

B) Pollution Control Equipment

C) Diffusion of Pollutant in air

D) Vegetation

E) Zoning

A) Source Correction Methods:- Industries make a major contribution towards causing Air Pollution Formation of Pollutants can be prevented and their emission can be minimised at the source itself.

This source correction method are.

1) Substitution of row materials:- If the use of a particular row material result in air Pollution then It should be substituted by another purer grade row material which reduces the formation of Pollutants.

- Low Sulphur fuel which has less Pollution potential can be used as an alternative to high Sulphur fuels.
- Comparatively more refined LPG or LNG(Liquefied Natural Gas) can be used instead of traditional high contamination fuels such as Coal.

2) Process Modification:- It coal is washed before Puluerization then fly-ash emissions are considerably reduced.

If air intake of boiler furnace is adjusted then excess Fly-ash Emission at power Plant can be reduced.

B) Pollution Control Equipment:- Sometimes Pollution control at source is not possible by preventing the emission of Pollutants. Then it becomes necessary to install Pollution control equipment to remove the gaseous Pollutants from the main gas stream.

They are classified into two types

•Control devices for particulate contamination.

• Control devices for gaseous contaminates

C) Diffusion of Pollutants in Air:-

Dilution of the Contaminate in the atmosphere is another approach to the control of air Pollution.

The Pollution source release only a small quantity of the Contaminates then Pollution is not noticeable as these pollutants easily diffuse into the Atmosphere but if the quality of air contamination is beyond the limited capacity of the environment to absord the contaminats then Pollution is caused.

However dilution of the contaminats in the atmosphere can be accomplished through the use of tall stacks which penetrate the upper atmosphere layers and disperse the contaminats so that the ground level Pollution is greatly reduced the hight of the stacks is usually kept 2 to 2½ time the height of nearby structures.

The disadvantage of the method is that it is a short term contract solution that actually brings highly undesirable long range effect.

This is so because dilution only dilutes the contaminats to level at which their harmful effects are less noticeable near their original source where as at a considerable distance from the source these very contaminats eventually come down in some form or another.

D) Vegetation:- Plants contribute towards controlling Air Pollution by utilising CO2 and O in the process of photosynthesis.

This purifies the air (removal of gaseous pollutant - Co2) for the respiration of men and animals.