

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 3 atoms of Oxygen. It the upper level of the earth's atmosphere. It absorbs harmful ultraviolet radiation.

(4) Sulphur dioxide:- SO_2 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, factories, 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.



Noteskarts

Subscribe & Visit our Website For Notes

Monitoring and control of Air Pollution:-

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

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

The data 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 raw materials:- If the use of a particular raw material result in air Pollution then It should be substituted by another purer grade raw 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 Pulverization 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



Noteskarts

Subscribe & Visit our Website For Notes

- Control devices for particulate contamination.
- Control devices for gaseous contaminants

C) Diffusion of Pollutants in Air:-

- Dilution of the Contaminant in the atmosphere is another approach to the control of air Pollution.
- The Pollution source release only a small quantity of the Contaminants 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 absorb the contaminants then Pollution is caused.
- However dilution of the contaminants in the atmosphere can be accomplished through the use of tall stacks which penetrate the upper atmosphere layers and disperse the contaminants so that the ground level Pollution is greatly reduced the height 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 contaminants 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 contaminants 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.



Noise Pollution

Noise Pollution also known as environmental noise sound Pollution is the propagation of noise with ranging impact on the activity of human or animal life.

Source:-

The source of outdoor noise worldwide is mainly caused by Machines, Transport and propagation system.

Effect of noise Pollution on human health and Animals

- Noise pollution refers to a sound that is annoying a nuisance or undesired for the ears and that which can impact the activity or behavior of the animal and human life.
- Noise is regarded as a pollutant majorly because it disrupts the natural flow of hearing or normal hearing Sense.
- Noise Pollution is effect the many problem like- Tinnitus, Hearing problem etc. Cardiovascular disease problems.

Control of noise Pollution

- A man inserting an earplug in his ear to reduce the noise exposure.
- Noise reduction mats and spray foams are common vehicle or building solution.
- Hedges are quite effective in Noise reduction.
- This highway has an added barrier that will aid in Noise reduction for the surrounding area.



Radioactive Pollution

The Radioactive Pollution is defined as the physical Pollution of living organism and their environment as a result of release of Radioactive.

Source of Radioactive Pollution:-

- The environment during nuclear explosions and testing of nuclear weapons and decommissioning mining of Radioactive.

Effect of Radioactive Pollution:-

Effects on Plants:-

- The plants are also expected to radiation and the damage is mostly done due to the increased Ultraviolet waves different Plant get affected differently.
- The stomata stop to evaporate during the increase of radiation. When the radiation hits the chromosome the reproduction gets hampered it result in altered shapes size and health in plants.

Effects on Animals:-

- The animals at Different levels suffer different levels suffer differently the higher level organisms get more affected then insects and flies.
- These radionuclide enter their metabolic cycles and affect their DNAs (mentioned - ionizing)
- This ends up having a mutated animal generation with a higher risk of health issues by just a small amount of Radionuclides.

Effects on Human:-

- Cancer is the most dominant radiation related disease.
- It has developed over the years and poses a great risk in global health others like- leukemia, anemia, hemorrhage a reduction in the life spine.
- Kids born have adverse defects caused by genetic mutations like low weight during birth

Prevention and control of Radioactive Pollution:-

- Avoid ordering radioactive materials in quantities that exceed your intended usage.
- Non-radioactive waste must never be mixed with Radioactive waste failure to do this significantly increase the volume of waste.
- Substitute with short lived Radionuclides where feasible. Limit the number of users of radioactive material.

