

MODULE –II

ENVIRONMENTAL POLLUTION

2.8 Noise pollution

- **Sounds and their decibel scale**
- **Causes of noise pollution**
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Sound is mechanical energy from a vibrating source. Unpleasant and unwanted sound is called noise. Sound can propagate through air, liquid or solid. Sound is pressure perturbation in the medium through which it travels. Sound pressure creates alternate compression and rarefaction. Sound pressure does not produce linear impact on human. A logarithmic scale has been devised.

Noise is measure in terms of SPL which is a log ratio of sound P to a std. P. It has a dimensionless unit decibel (dB). Sound can affect ears either by loudness or by pitch (frequency). The CPCB has recommended the permissible noise levels for various places.

Noise pollution is generally defined as regular exposure to elevated sound levels that may lead to adverse effects in humans or other living organisms. According to the World Health Organization, sound levels less than 70 dB are not damaging to living organisms. If you work for 8 hours daily in close proximity to a busy road or highway, you are very likely exposed to traffic noise pollution around 85dB. Noise pollution, unwanted or excessive sound that can have deleterious effects on human health, wildlife, and environmental quality. Noise pollution is commonly generated inside many industrial facilities and some other workplaces, but it also comes from highway, railway, and airplane traffic and from outdoor construction activities.

Noise pollution is defined as, the unwanted, unpleasant (or) disagreeable sound that causes discomfort for all living beings.

Sounds and their decibel scale

- Rocket engine – 180 dB
- Jet plane take off – 150 dB
- Threshold of pain – 140 dB
- Recorded music (max) – 130 dB
- Construction works, news paper press – 100 dB
- Motor cycle – 90 dB

- Ordinary conversation – 70/80 dB
- Air conditioning unit/ Light traffic – 60 dB
- Normal living room – 50 dB
- Library or soft whisper – 30 B
- Threshold of hearing – 0 dB

Causes of noise pollution

1. Heavy noise is produced by industries.(Ex) steel industry, rice mill, saw mill etc.
2. In industries noise is produced by,
 - i. Construction
 - ii. Product fabrication
 - iii. Product assembly
 - iv. Power generation
 - v. Processing activities
3. The transport noise mainly comes from road traffic rail traffic & air crafts
4. Train produces more noise than road traffic.
5. Maximum noise is produced by jet air craft (100db)
6. Badly managed roads produce more noise.
7. Domestic noise is produced from human dwelling places. (Ex) loud speakers, playing of children, church bells, temple bells, grinders etc.

Consequence of noise pollution

1. Noise reduces the power of hearing.
2. It gives pain to the ear.
3. It interferes with communication system.
4. It causes stress.
5. Noise increases the secretion of adrenaline hormone into blood stream which is responsible for blood pressure.

6. It increases the rate of heart beats, & blood pressure
7. It causes head ache, constriction of blood vessels, dilation of pupil of the eye.
8. It causes deafness, emotional upsets.
9. Noise causes physical (or) mental fatigue and lack of concentration.
10. Ultrasonic sound can affect the digestive, respiration cardio vascular systems and semicircular canals of the internal ear.

Control measure of noise pollution

1. Legislation should be framed
2. The sources that generate unwanted sound should be reduced.
3. Noisy auto mobiles should be condemned (punished)
4. Auto mobiles wheels should be oiled properly
5. Industrialists must take up necessary steps to control noise.
6. Lubricate the machines properly
7. Noise producing machines should be placed in closed room
8. Loud speakers should be set at low sound.
9. Trees absorb noise and this reduce the noise pollution so, thick vegetation must be growth around industries, cities and on the sides of roads.
10. Residential houses should be constructed far away from industries, factories & airports.