Module 4, Solid Waste Management, ISO 14000 & Environmental Management.

Waste (or wastes) are unwanted or unusable materials. Waste is any substance which is discarded after primary use, or is worthless, defective and of no use.

When the unwanted solid material is discarded in the environment by human beings it is called solid waste.

Solid waste includes garbage, construction debris, commercial refuse, and other discarded materials. Solid waste can come from industrial activities, commercial activities, mining, agricultural activities, medical field, household work and community activities.

Municipal solid waste is everyday items that are discarded by the public. It includes commercial and domestic wastes generated in municipal or notified areas in either solid or semi-solid form. Municipal solid waste (MSW) is generated from households, offices, hotels, shops, schools and other institutions. The major components of MSW are food waste, paper, plastic, rags, metal and glass.

The characteristics of municipal solid waste (MSW) are Physical composition, moisture content, compacted unit weight, and permeability.

Electronic waste or e-waste are discarded electrical or electronic devices. E-waste contains hazardous substances such as lead, polychlorinated biphenyls, polybrominated biphenyls (PBBs), mercury, polybrominated diphenyl ethers (PBDEs), etc, which requires special treatment and cannot be dumped in landfill sites. Different e-wastes include

1.Waste generated from the products used for data processing such as computers, and computer devices

2. Entertainment devices like TV, DVDs, VCRs and CD players.

3. Devices used for communication like phones, fax etc.

4. Household equipment’s like vacuum cleaner, microwave ovens, washing machines, air conditioners etc.

Biomedical waste. • Bio-medical waste means “any solid and/or liquid waste produced during diagnosis, treatment or vaccination of human beings or animals. Different Sources of Medical Waste are

•Hospitals, Emergency care facilities.

•Outpatient facilities, dialysis centers, transfusion centers, blood banks.

•Clinical laboratories, Research laboratories.

•Mortuaries, death care facilities, Veterinarians.

Metallic waste- Metallic waste, coming mostly from machining and manufacturing processes, also referred to as metal swarf. The most common scrap metals that we have found are aluminum, brass, steel, and copper. Metallic waste is formed in large quantities upon machining various devices and alloys.

One of the best ways to reduce the amount of Muncipal solid waste is to limit the consumption of raw materials and increase the rate of recovery and reuse of waste materials . **The principle of reducing waste, reusing and recycling resources and products is called the 3R Principles.** Waste management is first to reduce waste generation. The waste that cannot be reduced should be reused if possible. That cannot be reused or reduced should be recycled, particularly secondary materials such as metal and paper. Wastes that cannot be recycled should be incinerated or landfilled.

Waste collection is a part of the process of waste management. It is the transfer of solid waste from the point of use and disposal to the point of treatment or landfill. The functional element of collection includes not only the gathering of solid waste and recyclable materials, but also the transport of these materials, after collection, to the location where the collection vehicle is emptied. This location may be a materials processing facility, a transfer station or a landfill disposal site

The Air Pollution Control Act of 1981, was a law passed by the Parliament of India to prevent and control the harmful effects of air pollution in India. This act is seen as the first concrete step taken by the government of India to combat air pollution. The act defines ‘air pollution’ as the presence of any dangerous pollutant that makes the air unbreathable.

The key features of the Act include:

•Advising Central Government of Air and Air Pollution related issues

•Research about the causes and impact of Air Pollution

•Spread awareness to stop air pollution

•To establish central and State Boards and empower them to monitor air quality and control pollution

Air quality act 2004 - This act regulates air quality and provides measures for the prevention of pollution and ecological degradation. It further aims to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures and related matters.

A carbon credit is a tradable certificate or permit representing the right to emit a certain amount of carbon dioxide or the equivalent amount of a different green house gas. Carbon credit aims at reducing the emission of green house gases into the environment.

A carbon footprint is the total amount of greenhouse gases that are released into the atmosphere as a result of the activities of a particular individual, organization, or community. The major contributors to carbon footprints are: food, consumption, transportation, and household energy.

ISO - International Organization for Standardization - is an international standard development organization. It describes the best way of doing something. It could be about making a product, managing a process, delivering a service or supplying materials.

ISO 14000 is a set of standards for companies and organizations of any type that require practical tools to manage their environmental responsibilities.

The State Pollution Control Boards (SPCB) is an organization established to implement Environmental laws and rules within the concerned state's jurisdiction. The main functions of the State Pollution Control Boards are as follows: To plan a comprehensive programme for prevention, control and reduce the air pollution and to advise the State Government on any matter concerning prevention, control and reduction of air pollution.

The Central Pollution Control Board (CPCB) of India is a statutory organization under the Ministry of Environment, Forest and climate Change and was established in 1974. It is the apex organization in our country in the field of pollution control. **CPCB is led by its Chairman followed by the Member Secretary, and other members.**

CPCB has its head office in New Delhi, with seven zonal offices and 5 laboratories. The board conducts environmental assessments and research. It is responsible for maintaining national standards under a variety of environmental laws, in consultation with zonal offices, tribal, and local governments. It has responsibilities to conduct monitoring of water and air quality.