Sanitary Engineering

It is the branch of public health engineering dealing with collection, conveyance, treatment and disposal of wastes (garbage, sullage, sewage). The main purpose of sanitary engineering is to maintain such environment as will not affect the public health in general.

Dry Weather Flow (DWF)

The rate of flow of sewage (sanitary + industrial) in dry weather is known dry weather flow (D.W.F). the flow of sewage including storm mater in rainy season is known as wet weather flow (W.W.F)

Sewage

It is the waster or foul water of the community conveyed by sewer. There are three types of sewage.

- **Domestic or Sanitary Sewage**. The sewage from residential buildings, business centers, institutions also contain human body waste (feces and urine) and also sullage.
- **Industrial Sewage.** The liquid wastes obtained from industrial process such as dying, papermaking etc are known as industrial sewage.
- **Storm sewage.** It is that part of surface run-off which is flowing in sewer during or following a period of rainfall.

Sullage

It is the waste water resulting from personal wasting, bathing, laundry, food preparation and cleansing of utensils. It does not include discharge from hospital operation theater O.T which has high content of organic matters. Sullage is not very foul and can be disposed of in open drains without treatment.

Garbage

It is the dry refuse of town containing organic, inorganic solids, semisolids, combustible, noncombustible, putresible and nonputrescible substances. It includes sweeping from homes, streets market, public places, gardens, waste papers, leaves, grass parings of vegetables, decaying fruits etc with small amount of cinder, clay and gravel. It is collected separately from sewage and sullage and disposed of separately.

Infiltration

Infiltration is the water which has leaked into the sewer from the ground.

Exfiltration

It is leakage from the sewer to the ground.

Inflow

It is the water entering the sewers from surface source through cracks in manholes, open cleanouts, perforated manhole covers and roof drains connected to the sewers. Inflow occurs only during runoff.

Sewers

Sewer is a pipe or conduit carrying sewage. Sewers are usually not flow full (Gravity Flow). The full flowing sewers are called force main as the flow is under pressure.

Sewerage

It is the science and art of collecting, treating and disposal of sewage. There are three types of sewerage system.

- **Separate system.** In this system the sanitary sewage and storm water are carried separately in two set of sewers.
- **Combined sewerage system.** In this system the sewage and storm water are carried combine in only one set of sewers to the waste water.
- **Partially separate sewerage system.** This system is the compromise between separate and combine system taking the advantages of both systems.