"Waste Waters Engineering"

Submitted by :- Muhammad Usama.

ID :- 7731

Section :- A

Submitted to :- Engr. Nadeem ullah.

Question # (1)

Answers:- Waste Water Engineering

It is the application of Engineering method to improve the Sanitation of human Communities, Primarly by Providing the removal & disposal of human waste, treatment and reuse application for various purpose.

- Applications:-

- By disposing off treated waste water in order to reduce ground water contamination and Protect aquatic life.
- Waste water engineering deals with the management of Waste water and its treatment to reuse it for various purpose.
- The recovery of sewage is an effective means of Saving water resources and Promoting the reuse of water resources of waters. It is an important measure to reduce the Pollution of Sewage & Protect the environment.
- Primary objective of Waters Waste engineering is to Provide a good Sanitary enviornmental condition in a city.

Question # (2)

Answer:

In situation where waste wate flow rate data are limited or unavailable waste water flow rate estimate have to be developed from water consumption records in ~~others~~ other information

About 60-85% of supply water per capita becomes waste water. Simply waste water generated is dependent on applied water. as supplied water. increases the waste water will be more.

Question # (3)

Answer: Importance of waste water characterization

A characterization of waste water provides a wides variety of information regarding the type and concentration of contaminants presents.

- With the characterization of waste water we determine the nature of contaminant (physical, biological, chemical). and then design waste water treatment plant according to the nature of contaminants.

Question # (1)

Answer: Characteristics of Waste Water

- Physical Characteristics :-
- Turbidity
- Colour
- odour
- Total solids
- Temperature.
- Chemical characteristics :-
- Chemical oxygen demand (COD).
- Total organic carbon (TOC).
- Nitrogen.
- Phosporous, chlorides
- PH
- Heavy metals.
- Trace elements.
- Priosity pollutants.
- Biological Characteristics :-
- Biological oxygen demand (BOD).
- Oxygen required for nitrification.

- Microbial population (Bacteria pathogens).

Question #(5)

Answer:- Combined Sewerage System

- Advantages :-

- Both domestic Sewage and storm water are carried in a single sewer, so construction cost is less.
- The strength of domestic sewage is reduced because of dilution of storm waters.
- In towns with narrow streets, this system is preferred
- The sewers are of large size and therefore the chances of their chocking are rare. It is easy to clean them.

- Disadvantages :-

- Initial cost is high because of large dimensions of sewers.
- Because of large size of sewer, their handling and transportation is difficult.
- Due to the inclusion of storm water, the load on the treatment plant increases and ultimately increases treatment costs.
- During heavy rain the sewer may be overflow and may thus create unhigienic condition.

Separate Sewerage System

• Advantages :-

Size of Sewers is generally less.

- Since the Sanitary Sewage and storm water flows in a separate Pipes, the quantity of Sewage to be treated is less.
- As the Sewer are smaller in Section. they can be easily ventilated.
- Rain water can be discharged in to the stream or can be reused / recycled without any treatment.

• Disadvantages :-

- Since the Sewers are of smaller size, it is difficult to clean them.
- They are likely to get chocked / blocked.
- Initial cost is high, when two separate sets are used.
- Maintenance cost of System is also high.