Name:- Nadir-Aziz ID = 7547

Subject:- Waste Water Engg. Semester:- 10th

Q1: What is waste water Engineering? Briefly discribe its application in Safeguarding the enviroment?

Ans **Waste Water Engineering:-**

Waste water Engg. or Sanitary Engineering, also known as public health engineering, is the application of engineering method to improve Sanitation of human communities Primarily by providing the removal and disposal of human waste, treatment and reuse application for various Purposes.

* Applications In Safeguarding the enviroment.

(i) => By disposing of treated wastewater in order to reduce ground water contamination and protect aquatic life.

(ii) Wastwater engineering deals with management of waste water and its treament to reuse it for various purpose.

(iii) Primary objective of wastewater engineering is to provide a good sanitory enviromental condition in a city.

(iv) It also reduces the Soil Salinity by reduceing the Salt concentration in waste water which is disposed of to the enviroment.

(v) When waste water is discharge on dry land it seeps into the ground water table and contaminated it thus proper disposal method should be adopted to protect Sub Soil water from contamination.

Q2 Briefly discribe the relationship of waste water generation with water supply of a locality.

Ans: Relationship of waste water:.

The relationship b/w waste water engineering with water supply of locality are as follow.

(i) In the field measurment of waste water flow rates are not possible and actual waste water flow rate data are not available

(ii) If there is no water supply then there will be no waste water generation occur in a locality.

(iii) If there might be changes occuring in between water supply and effecting the water supply there will also waste water generation will also be affected.

(iv) About 60- 85% of Supplied water per capita becomes waste water.

(iv) Simply waste water generation is dependent on Supplied water, as the Supplied water increase, the waste water generation will be more.

Q3 What is the importance of waste water characterization?

Ans: A characterization of waste water provides a wide variety of information regarding the type and concentration of contaminants present.

With characterization of waste water we determine the nature of contaminant (Physical, Geological, Chemical) and than design waste water treatment plant according to the nature of contaminants.

Q4 Enlist Physical, Chemical and Biological Characteristic of waste water?

Ans Characteristic of Waste Water:

(i) Physical Characteristics:=>

(a) Turbidity
(b) Color
(c) Total Solids
(d) Temperature.

(2) Chemical Characteristics:.

(a) Chemical oxygen demand (COD)
(b) Total organic carbon (TOC)
(c) Nitrogen
(d) Phosphorous
(e) Chlorides
(f) PH
(g) Trace element.
(h) Priority Pollutants.

(3) Biological Characteristics.

(a) Biological oxygen demand (BOD)
(b) Oxygen required for nitrification.
(c) Microbial Population (bacteria Pathogens)

Q5 What are the advantages and disadvantage of combine and separate sewerage system? Which sewerage system will you recommend for a new proposed township support your answer with justification.

Ans Combined System.

(i) Advantages

=> (a) Both domestic Sewage and storm water carried in a single sewer, So Construction cost is less.

=> (b) The Strength of domestic Sewage is reduced beacuse of dilution of storm water.

(c) The Sewers are of large Size and the chance of their chocking are rare. Its easy to clean them.

(d) In twons with narrow streets, this system is preferred.

(ii) Disadvantages (a) ~~Init~~

(a) Initial cost is heigh beacuse of large dimension of Sewers.

(b) Beacuse of large Size of Sewers, their handling and transportation is difficult.

(c) During heavy rain the Sewer maybe overflow & may thus creat unhygienic condition.

(d) If the whole sewages is to disposed off by pumping its uneconomical.

* Separate Sewerage System:-

* ~~And~~ Advantages:-

~~(a)~~ (a) Size of the sewers is generally less.
(b) Since the Sanitary sewage and storm water flows in a separate pipes, the quantity of sewage to be treated is less.
(c) As the sewer are similar in section, they can be easily ventilated.
(d) Rain water can be discharge into the stream or can be reused/recycled without any treatment.

* Disadvantages:- (a) Since the sewers are of similar size, so its difficult to clean them.
(b) They are likely toget chocked/blocked
(c) Initial cost is high, when two separat sets are reused.
(d) Maintenance cost of system is also high.

SUGGESTION:-

I will suggest combined Sewerage because both domestics and Strom water are carried in a single sewer so construction is less and sewers are of large size so they are easy to clean and also easily remaintainance can be done.

End