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SUBJECT :

WAST WATER ENGINEERING

TEACHER :

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DEPARTMENT :

CIVIL ENGINEERING

SECTION : "B"

QUESTION # 01

What is Waste water Engineering Briefly describe its applications in safe gaurding the environment?

WASTE WATER ENGINEERING :

→ Waste water Engineering Can be define as " It is the application of Engineering methods to improve Senitation of human Comunities, primarily by providing the removal and disposal of human waste, treatment and reuse application for various purpose.

→ Waste water Engineering also lenown as public health Engineering.

APPLICATIONS :

The application of waste water Engineering as under;

1. **TO SAVE THE AQUATIC LIFE:**

→ By disposing off Treated waste water in order to reduce ground water contamination and protect the aquatic life from toxic substances.

2. **TO REDUCE THE DISRUPTION OF FOOD CHAIN:**

→ As pollution disrupt the natural food chain as well pollutant such as lead and cadmium are eaten by tiny animals, later, these animals are eaten by by fish and shellfish and the food continous, as these toxic substances eaten by fishes which may harmful for humans as well, By Engineering we can reduce that problem.

3. **RECOVERY OF SEWAGE:**

→ The Recovery of Sewage is an Effective means of

Saving water resources and promoting the reuse of water resources. It is an important measure to reduce the pollution of sewage and protect the Environment.

4. → Waste water Engineering deals with the management of waste water and its Treatment to reuse it for various purpose.

5. **INDUSTRIAL WASTE :**

→ With the help of an Engineering we can design a proper drain/sewage system for industrial waste. Now a day the industrial waste directly connected with Rivers and lakes. which make Environment harmfull, and also disturb the water cycle systems. as that harmfull water Evaporates and form an acidic Rain.

QUESTION # 02

Briefly describe the relation-ship of waste water generation with water supply of a locality?

→ In situation where waste water flow rate data are limited or unavailible waste water flow rate Estimate have to be developed from water Consumption records in other information.

→ About 60-85 % of Supplied water per capita become waste water.

→ Simply wastewater generated is dependent on Supplied water and population of that area as the population increases the waste water will be more.

QUESTION #03

What is the Importance of waste water characterization?

→ A characterization of waste water gives us an information that, which type of contaminations are present in the water.

→ From the characterization of waste water we become to know about the nature of contaminations. Such as physical, chemical, biological etc.

→ Physical characterization means that will be in hard form (no leathering) and suspended partical present in it.

→ Chemical characterization mean that, there will be some toxic chemical present in water which mostly due to industrial waster.

→ Biological characterization mean, there will be beetria

of non pathogen- choeter or phatogen chareefer present in in It.

→ Once we came to lenow about the characfer of wastewater than according to them we design the treatment. plant.

QUESTION # 04

Enlist the physical, chemical biological characteristic of water.

PHYSICAL CHARACTERISTICS:

The physical characteristics of water are as under.

1. Turbidity
2. Temprature
3. Oder
4. color
5. total solids

CHEMICAL CHARACTERISTICS:

The chemical characteristic of water are as Under.

1. Heavy metals
2. PH.
3. phosporus, chloride.
4. Total Organic carbon.
5. Nitrogen.
6. Chemical Oxygen demand.
7. priority pollutents
8. trace elements.

BIOLOGICAL CHARACTERISTICS:

1. Biological Oxygen demand.
2. Microbial populations.
3. Oxygen required for Nitrification.

QUESTION # 05

What are the advantages & disadvantages of combine & Separate Sewerage System? which system will you recommed for a new proposed township Support your Answer with Justification.

COMBINE SEINERAGE SYSTEM:

ADVANTAGES:

1. The Strength of domestic Sewage is reduced beceuse of dilute of storm water

2. In town with narrow streets, this System is prefered.

3. Both domestic Sewage and storm water are carried in a single Sewer, so construction lost is less.

4. The Sewers are of large Size and therefore the chance

of their choeking are rare
It is easy to clean them.

DISADVATAGES :

1. Because of large size of Sewer, their handling and transportation is difficult.

2. Initial lost is high because of large diemensions of Sewers.

3. During heavy rain the Sewer may be overflow and may thus create Unhygenic Conditions.

4. Due to inclusion of storm water, the load on the treatment plant increases and Ultimately increases treatment cost.

5. Initial lost is high because of large dimension of Sewers.

SEPARATE SEWERAGE SYSTEM

ADVANTAGES:

1. Size of Sewers is gernally less.

2. Since the Sanitary Sewage and storm water flow in a separate pipes, the quality of Sewage to be treated is less.

3. As the Sewer are Smaller in Section they can be Easily Ventilated.

4. Rain water Can be discharge in to streams or Can be reused / recycled with out any treatment

DISADVANTAGES:

1. Since the Sewer are of Smaller Size, It is difficult to clean them.

2. They are likely to

to get Chocked / blocked.

3. Initial cost is high., When two Separate set are used.

4. Maintenance cost of System is also high.

→ I will suggest the Seperate Sewerage System the main reason for separate Sewerage System is that Surface runoff is gernally less polluted than wastewater. and that treatment of combined. waste water and Surface run off is difficult during heavy rain fall; resuting en Untreated overflow, Controlling the Surface runoff Seperatly and avoid. Combined Sewer overflow. residents in low laying area in particular will avoid having Their basements and ground flors flooded during Extreem rain Event. should. a rain events leading a flooding monthes, rainwater and

not Unsanitary Sewage from kitchen and bathrooms will rise up into the their base-ments.