SUBMITTED TO

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SECTION ⟷ "B"

STUDENT ID 7739

SUBJECT Wastewater Engineering.

Qno 1:

Answer: Waste Water Engineering.

A process use to removal of contamination from wastewater or sewage.

⇒ An Application of engineering methods to improve sanitation of human communities, primarily by providing the removal and disposal of human waste treatment and reuse application for various purposes. As we have shortage increasing now adays so that's why treatment is necessary to fulfill the needs of peoples, industries etc.

Applications:-

⇒ It is related to the treatment to reuse again for various purposes.

It deals with the management of wastewater.

⇒ To protect aquatic life and specially to reduce ground water contamination by disposing off treated waste water.

⇒ The waste water treatment and recovery of all sewage system is an effective means of (main object) saving water resources.

To protect the enviroment and reduce pollution is an important measure.

Such activities can protect our environment and pollution. like recovery and treatement plants.

⇒ The main objective ~~is~~ ~~atto~~ of wastewater engineering is to provide a good and clean environment condition to human or in a city.

Qno 2:-

Ans: We can estimate or find the waste water flow rate from water consumption records in other information or water supply records can be used as an old to find it if there is shortage or difficiency of wastewater data. or unavailable data.

Waste water is dependent on supplied water as 60 to 85% of supplied water becomes water, so waste water will be more when the supplied water is increasing.

Qno 3: 3

Ans: Wastewater Characterization.

By Characterization we can determine the nature of contaminant. nature and type of contaminant that weather it is physical, chemical or biological. Physicaly that it is in hardform or chemically that there is any chamical or biological that there is any beuteria present in it that comes fromes houses, industries etc and then design waste water treatment plant according to the nature of contaminants.

As characterization of wastewater also provides the concentration and information regarding the type of contaminants.

Qno4: Characteristics Of Wastewater.

1) Physical Characteristics:

1) Turbidity
2) Colour

3) Odor.

4) Total solids.

5) Temperature.

2) Chemical characteristics.

1) Chemical oxygen demand (COD)

2) Total organic carbon (TOC)

3) Nitrogen

4) Phosporous, chlorides.

5) PH

6) Trace elements.

7) Priority pollutants.

3) Biological Characteristics.

1) Biological oxygen demand (BOD)

2) Oxygen required for nitrification.

3) Microbial population (baeteria) pathogens).

Qno # 5 [5]

Ans: Combined System.

Advantages.

1) Both domestic sewage and storm water are carried in a single sewer, so construction cost is less.

2) The strength of domestic sewage is reduced because of dilution of storm water.

3) The sewers are of large size, and therefore the chances of their chocking are rare. It is easy to clean them.

4) In towns with narrow streets, this system is preffered.

Disadvantages:-

1) Initial cost is high because of large dimensions of sewers.

2) Because of large size of sewer, their handling and transportation is difficult.

3) Due to inclusion of storm water, the load on the treatment plant increases and ultimately increased treatment costs.

4) During heavy rain the sewer may be overflow and may thus create unhygienic conditions

5) If the whole sewage is to be disposed off by pumping it is uneconomical.

2) Separate Sewerage System.

Advantages:

1) Size of sewers is generally less.

2) Since the sanitary sewage and storm water flows in a separate pipes, the quantity 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 discharged into the streams or can be reused / recycled without any treatment.

Disadvantages.

1) Since the sewers are of smaller size, it is difficult to clean them.
2) They are likely to get chocked / blocked.
3) Initial cost is high, when two separate sets are used.
4) Maintenance cost of system is also high.

⇒ And the system that I will suggest is combined sewerage system because both domestic sewage and storm water are carried in a single sewer so "construction cost is less" and sewer are of large size so they are "easy to clean."