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Q1 what is waste water engineering? Briefly describe its application in safeguarding the environment.

Ans: Waste water is the combination of liquid & water-transported wastes from homes, commercial building, industrial facilities, & along with any ground water infiltration & surface water & storm water in flow that many ~~are~~ enter the sewer system.

### APPLICATION: →

1) By disposing off treated waste water in order to reduce ground water contamination & protect aquatic life

2) Wastewater: →

Engineering deal with the management of waste water & its treatment to reuse it for various purpose

3) The recovery of sewage is an effective means of saving water resource & promoting the reuse of water resources. It is important measure to reduced the population of sewage protect the environment.

4) Primary objective of waste water engineering is to provide a good sanitary environmental condition in a city

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Q2 - Briefly describe the relationship of waste water generation with water supply of a locality?

Ans:- The relationship of waste water generation with water supply of a locality is that;

In situations:-

In situations where waste water flow rate data are limited or unavailable waste water flow rate estimate have to be developed from water consumption records in other information.

About:-

About 60-85% of supplied water per capita becomes waste water.

Simply:-

Simply waste water generated is dependent on supplied water. As increase, the



waste water will be more.

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Q3: what is the importance of wastewater characterization?

Ans - A characterization of waste water provide a wide variety of information regarding the type & concentration of contamination present. with characterization of waste water, we determine the nature of contaminants physical, chemical, & then design waste water treatment plant according to the nature of contaminants.

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Q4: Enlist physical, chemical & biological characteristic of waste water,

Ans: Characteristic of wastewater ARE AS follow:-

1) Physical characteristics:-

Turbidity, color, odor, total solids & temperature.

2) CHEMICAL CHARACTERISTIC:-

Chemical oxygen Demand (COD), Total organic carbon (TOC), Nitrogen

Phosphorous, chlorides, sulphates, Alkalinity, PH  
Heavy metals Trace elements & Priority  
Pollutants.

Q5: What are the advantages & disadvantages of combine & separate sewerage system? which sewerage system will you recommend for a new purpose town ship support your answer with justification?

Ans: — Combine Sewerage System:

ADVANTAGES: —

- 1) Both domestic sewage & 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, & therefore the chances of their clogging are rare. It is easy to clean them.



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

### 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 the inclusion of storm water, the load on the treatment plant increase & treatment cost.
- 4) During heavy rain the sewer may be overflow & may thus create unhygienic conditions.
- 5) If the whole sewage is to be disposed off by pumping it is uneconomical.

### SEPARATE SEWERAGE SYSTEM: →

#### Advantages: →

- 1) Size is generally less.
- 2) Since the sanitary sewage water flows in a separate pipe, the quantity of sewage to be treated

is less.

- 3) As the sewers are smaller in section they can be easily ventilated. Rain water can be discharged into streams or can be reused/recycled with out any treatment.

#### DISADVANTAGES: →

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

#### JUSTIFICATION: →

I will propose combined sewage system for a new township because both domestic sewage & sewage water carried in single sewer so construction cost is less & sewers are of large size so they are easy to clean.

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