

Date:

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Subject

Waste Water Engeneering .

Submitted to

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Q1

Date:

What is waste water engineering? Briefly describe its application in Safeguarding the environment?

Ans:-

Waste water engineering is also known as public health engineering. It 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.

Application in Safeguarding the environment.

- 1) By disposing off treatment treated wastewater in order to reduce ground water contamination and protect aquatic life.
- 2) Waste water engineering deals with the management of wastewater and its treatment to reuse it for various purposes.
- 3) The recovery of sewage is an effective means of saving water resources. It is an important measure to reduce the pollution of sewage & protect the environment.
- 4) Primary objective of wastewater engineering is to provide a good sanitary environmental condition in a city.

Q2)

Q2)

Briefly describe the relationship of wastewater generation with water supply of a locality?

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Ans) The relationship of wastewater generation with water supply of a locality is that,

If field measurement of waste water flow rates are not possible and actual wastewater flow rate data are not available, water supply records can often be used as an aid to estimate waste water flow rates.

Q3. What is the importance of wastewater characterization?

Ans. The importance of wastewater characterization is to be known about physical, chemical and biological characteristics of wastewater because due to this we know that waste water is physically means that it will be in hard form and suspended solids are present in it.

Due to chemical characterization we know that the chemical present in wastewater which mostly come out from industries and to treat as they are.

Due to biological characterization we know that the waste water has the bacteria present in it.

Q4. Enlist physical, chemical and biological characteristics of waste water?

Ans. 1) Physical characteristics:

Following are the physical characteristics of waste water

Turbidity.

color.

odor.

total solid.

temperature.

2) Chemical characteristics:

Following are the chemical characteristics of waste water

Chemical oxygen demand (COD).

Total organic carbon (TOC).

nitrogen.

Phosphorus.

Chlorides.

Sulfates.

Alkalinity.

pH.

Heavy metal.

Trace elements.

Priority pollutants.

3) Biological characteristics.

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of waste water.

Following are the characteristics

Biochemical oxygen demand (BOD).

Oxygen required for nitrification.

Microbial population.

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

Ans.

Advantages of combine sewerage system:

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 choking are rare. It is easy to clean them.

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

Disadvantages of combine sewerage system:

1) Initial cost is high because of large dimension of sewer.

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 increases treatment cost.

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.

Separate Sewerage System

Advantages

- 1) Size of sewers is generally less.
- 2) Since the sanitary sewerage and storm 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.
- 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 choked/blockred.
- 3) Initial cost is high, when two separate sets are used.
- 4) Maintenance cost of system is also high.

I suggest combined sewerage system because both domestic sewage & storm sewage are carried in a single sewer so construction cost is less and sewers are of large size so they are easy to clean.