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Sec :- "C"

Subject :- Waste Water Engineering.

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Ans 1) Waste water engineering:

Waste water engineering is the basic Principle of science and engineering in which we are trying to improve removal and disposal of human waste and human communities and such that to make it reuse again for various purpose.

: Applications:

⇒ By disposing of treated waste water and ordered to reduce ground water contamination and protect aquatic life.

⇒ water resources allocation to the competing group of water users in the society, commercial, industrial agricultural.

⇒ Primary objective of waste water engineering to provide good sanitary environmental condition in city.

⇒ The basic objective of waste water engineering is to provide good and healthy water to the humans.

Ans 2) The relationship of waste water generation with water supply of a locality is that,

If field measurement of waste water flow rates are 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.

Ans 3):- By characterizing the waste water we can determine the nature of physical contaminant, chemical properties and biological contaminant other this we will be able to design a water treatment plant according to the nature and type of contaminants.

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

Ans 4) Physical characteristics:

a) Turbidity.
b) color.
c) odor.
d) total solids.
e) temperature.

Chemical characteristics:

a) Chemical oxygen demand.
b) Total organic carbon.
c) Nitrogen.
d) Phosporus.
e) PH
d) Heavy Metals.
S) trace element.

Biological characteristics:

a) Biological oxygen demand.
b) Oxygen required for nitrification.
c) Microbial population.

Q5) Ans. :- Advantages of combined sewerage system:

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

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

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

⇒ In towns with narrow streets, this system is preferred.

Disadvantages:

⇒ Initial cost is high because of large dimensions of sewers.

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

⇒ Due to the inclusion of storm water, the load on the treatment plant increase and ultimately increase costs.

⇒ During heavy rain the sewer may be flow and may thus create unhygienic conditions.

Separate sewerage system:

Advantages:-

⇒ Size of sewers is generally less.

⇒ Since the sanitary sewage and storm water flows in a separate pipes, the quantity of sewage to be treated is less.

⇒ As the sewer are smaller in section, they can be easily ventilated.

⇒ Rain water can be discharged in to the streams or can be reused without any treatment.

Disadvantages:-

⇒ Since the sewers are of smaller size.

⇒ They are likely to get blocked.

⇒ Initial cost is high, when two separate sets are used.

⇒ Maintenance cost of system is also high.

I will suggest 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 easy to clean.