

NAME : HAMAD

Reg No : 7747

SECTION : "B"

SUBJECT : WASTEWATER
ENGR-ING

DEPT : Civil ENGR

SEMESTER : 8th

EXAM : MID TERM

INSTRUCTOR : Engr Nadeem

QUESTION NO : 1

ANSWER

Waste Water Engineering :-

It is application of engineering methods to improve sanitation of human communities, primarily by providing the removal & disposal of human waste, treatment and reuse application for various purposes.

APPLICATION :

1

By disposing off treated wastewater in order to reduce ground water contamination and protect aquatic life.

2

Waste water engineering

deals with the management of waste-water and its treatment to reuse it for various purposes.

3 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 & protect the environment.

4 Primary objective of wastewater engineering is to provide a good sanitary environmental condition in a city.

QUESTION NO : 2

ANSWER

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

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

Simply wastewater generated is dependent on supplied water. As increase, the waste water will be more.

QUESTION NO : 3

ANSWER

A characterization of wastewater provide a wide variety of information regarding the type and concentration of contamination present.

With characterization of wastewater provides a wide variety of information regarding the type and concentration of contamination we determine the nature of contaminants (Physical, chemical, and then design waste water treatment plant according to the nature of contaminants.

QUESTION NO : 4

ANSWER

Characteristics of
Wastewater

1) Physical Characteristics

Turbidity

Colour

Odor

total Solids

Temperature

2) Chemical Characteristics

Chemical Oxygen
demand (COD)

Total Organic Carbon
(TOC)

Nitrogen

Phosphorous, chlorides

PH

Heavy Metals

6
Trace elements

Priority pollutants

3 Biological Characteristics

Biological oxygen demand
(BOD)

Oxygen required for
nitrification

Microbial population
(Bacteria, pathogens).

Question No : 5

ANSWER

1) Combined System

Advantages ::

Both domestic sewage & 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 choking are rare. It is easy to clean them.

In towns with narrow street, this system is

preferred.

Disadvantage's

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

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

Initial cost is high because of large dimension of sewer.

During having rain the sewer may be overflow and may that create condition.

If the whole sewage

is to be disposed of
if by pumping it
is uneconomical.

2) Separate Sewage System

Advantage's ::

Rain water can be discharged into the streams or can be reused / recycled without any treatment.

Since the sanitary sewage and storm of sewage to be treated is less.

Size of sewers is generally less.

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

Disadvantage's :-

Since the sewers are of smaller size. It is difficult to clean them.

They are likely to get choked / blocked.

Initial cost is high, when two separate set are used.

Maintenance cost of system is also high.

And the system that 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.