

Assignment # 01 Revised

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Section: B

Subject: WASTE WATER ENGS.

# Hydraulic Retention Time:

The hydraulic Retention time (HRT) is a measure of the average length of time that soluble compound remains in a constructed bioreactor. The volume of the aeration tank divided by the volume of the aeration tank divided by the influent flowrate is  $(\frac{V}{Q})$  day.

## Solid Retention Time (SRT)

Solid Retention Time is the average time the activated sludge solid are in the system the SRT is an important design and operating parameter for activated sludge

(2)  
Process and is usually  
Expressed in days.

$$SRT = \frac{V \times cd}{\text{Root} \times \text{Cost}}$$

## Decoupling SRT from HRT

Decoupling SRT and HRT enhance  
the organic loading rate and  
sanable reactor size reductions.

There are four approaches to  
decouple SRT from HRT.

Approaches :-

- Bio-man Immobilization in  
attached fourth system.
- Granulation and floc formation
- Bio-man recycling.

(3)

→ Bio-man relation.

## Advantages of Decoupling SRT from HRT:

Decoupling implies using less  
Resources and generating less waste.  
Permit of economic activity.

Relative decoupling is a positive  
sign the real aim is to achieve  
absolute decoupling where the  
economy can continue to grow  
and waste generation reduce.