

Name	M-Reshad
ID	7750
Sec	A
Assignment	1
Subjet	Wate water

$Q = N = 01$   
⇒ Hydraulic Retention time:

Hydraulic retention time (HRT) is a measure of the average length of time that a Soluble Compound remain in a constructed bioreactor

It is the relation b/w volume and flow rate

$$HRT = V / \text{Flow rate}$$

Time of stay of water in reactor

This term is usually used for the determination of the quantity of the influent in a particular volume of a reactor.

⇒ Solids Retention Time:

The Solid Retention Time (SRT) is the average time the activated-sludge the ~~average time the activ solid are~~ in the system.

The SRT is an important design and operating parameter for the activated-sludge process and is usually expressed in day.

Q = No = 02

What are the methods used for decoupling SRT from HRT.

By decoupling the SRT and HRT, the liquid wastewater can be processed faster. HRT is the time water is retained within the average volumetric flowrate in many instances a short HRT will reduce Capital Operation Cost. There may be some advantages for a simple design generally reliable and easily managed with although modern controls permit it handles off management of more complex design that decouple HRT and SRT.

Q = No = 03

What are the advantages of decoupling SRT from HRT

HRT treatment technology has relatively low equipment cost  
⇒ Available HRT treatment system can be applied at small as well as larger scale.

- ⇒ HRT process stability can be easily achieved
- ⇒ Management requirement is low
- ⇒ Foaming of surfactant containing wastewater can be avoided
- ⇒ The HRT treatment technology does not require the import of expensive equipment.
- ⇒ The HRT nonbiodegradable organics can be degraded.
- ⇒ Less space is required for an HRT treatment plant compared to an HRT treatment plant