NAME:_____

CE 311 Environmental Engineering I **Fall 2016**

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QUIZ: SUSPENDED SOLIDS

1. TS is the sum of

   a) VSS and TDS
   b) TDS and TSS
   c) VSS and FSS
   d) none of the above

$TS = TSS + TDS$ or $TDS + TSS$

2. VSS for a wastewater sample can be a measure of

   a) salinity of a sample
   b) bacteria in a sample
   c) temperature of a sample
   d) none of the above

3. TDS can be a measure of

   a) salinity of a sample
   b) temperature of a sample
   c) salinity and conductivity of a sample
   d) none of the above

4. VSS data can be used to predict

   a) if a sample has viruses
   b) the organic content of a sample
   c) the inert content of a sample
   d) none of the above

5. FSS data can be used to predict

   a) if a sample has viruses
   b) the organic content of a sample
   c) the inert content of a sample
   d) none of the above

6. TSS is regulated in treated wastewater and the effluent limit is

   a) 500 mg/L
   b) 30 mg/L
   c) 150 mg/L
   d) none of the above

7. TDS is regulated in drinking water and the limit is

   a) 500 mg/L
   b) 30 mg/L
   c) 150 mg/L
   d) none of the above

8. TSS of a water sample cannot

a) be less than the FSS
b) be less than TS
c) be less than TDS
d) none of the above

$TSS = VSS + FSS$

$\therefore TSS \geq FSS$

9. The following data was obtained for a wastewater sample:

TS 4000 mg/L TSS 5000 mg/L VSS 2000 mg/L FSS 1000 mg/L

If you have confidence that the TS data is accurate then one can conclude that the

a) VSS data is questionable
b) TSS data is questionable
c) FSS data is questionable
d) All data is accurate

$4000 = TSS + TDS$

cannot exceed TS

$TSS = VSS + FSS$

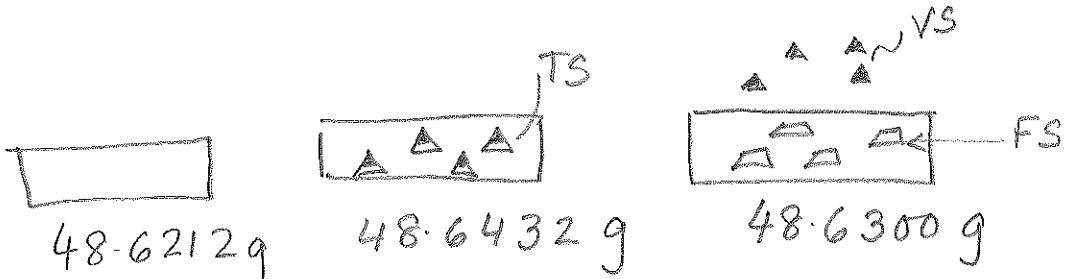
10. Calculate the TS, Volatile and Fixed solids for a sample with data provided below:

Sample volume 100 mL

Weight of dish **48.6212 g**

Weight of dish + dry solids after evaporating 100 mL of sample **48.6432 g**

Weight of dish + residue after burning the evaporated residue at 550°C followed by cooling **48.6300 g**



$$TS = \frac{(48.6432 - 48.6212)\,g}{100\,mL} \times \frac{10^3\,mg}{g} \times \frac{10^3\,mL}{L}$$

$$= 220\ mg/L$$

$$VS = \frac{(48.6432 - 48.63)\,g}{100\,mL} \cdot \frac{10^3\,mg}{g} \cdot \frac{10^3\,mL}{L}$$

$$= 132\ mg/L$$

$$FS = TS - VS = 88\ mg/L$$