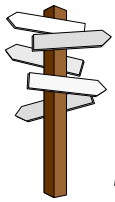

Certification Boulevard

Test Your Knowledge of Water Resources Management … And Other Miscellaneous Wastewater Treatment Topics

1. What does the term absorption mean?

   A. Impregnate a solid with air
   B. The taking in of one substance in the body of another
   C. To gather onto the surface of a substance
   D. To stick like fly paper

2. What are typical loading equivalents in domestic wastewater?

   A. About 0.17 lbs BOD/capita/day
   B. About 0.2 lbs TSS/capita/day
   C. About 100 to 150 gal/capita/day
   D. All of the above
   E. None of the above

3. Given the following data, how much alkalinity is required to accomplish nitrification?

   - Influent Flow is 0.18 mgd
   - Influent TKN is 35 mg/L
   - 95% of TKN will become NH_3 to be nitrified
   - $SCBOD_5$ removal is 98%
   - 7.14 lbs of alkalinity consumed per lb of ammonia converted

   A. 375 lbs
   B. 160 lbs
   C. 250 lbs
   D. 356 lbs

1. Given the following data, what percentage of TSS is removed through the entire treatment plant?

   - Influent Flow is 2.3 cfs
   - Influent TSS is 250 mg/L
   - Primary Effluent TSS is 110 mg/L
   - Secondary Effluent is 8 mg/L
   - Final Effluent is 2 mg/L

   A. 96.5%
   B. 99.2%
   C. 98.3%
   D. 89.6%

2. Which types of bacteria are responsible for stabilization of organic material ($CBOD_5$) in wastewater?

   A. Nitrosomonas
   B. Heterotrophic
   C. Nitrobacter
   D. Autotrophic

3. In a well-operated anoxic zone, what is the desired electron acceptor present in the MLSS?

   A. NO_2
   B. NH_3
   C. NH_4
   D. NO_3

4. Which types of bacteria are responsible for converting NO_2 to NO_3?

   A. Heterotrophic
   B. Nitrosomonas
   C. Nitrobacter
   D. Fermenters

5. Given the following data, what is the daily volume of WAS to be removed in this activate sludge plant?

   - Aeration Tank Capacity is 75,000 cubic feet
   - MLVSS Concentration is 3,750 mg/L
   - Mixed Liquor is 74% Volatile
   - Desired MLSS Inventory is 21,054 Lbs
   - WAS Concentration is 10,000 mg/L

   A. 31,705 gals/day
   B. 55,845 gals/day
   C. 13,332 gals/day
   D. 15,956 gals/day

6. What is the term that describes the combination of ammonia-nitrogen, nitrate-nitrogen and nitrite-nitrogen?

   A. Total Nitrogen (TN)
   B. Total Soluble Nitrogen (TSN)
   C. Total Kjeldahl Nitrogen (TKN)
   D. Total Inorganic Nitrogen (TIN)

10. Match the following:

1. Suspended	A. Particles in solid state, which can be removed from liquid by physical means, but too small to settle out.
2. Colloidal	B. Substance homogeneously dispersed in liquid.
3. Dissolved	C. Particles large enough to settle out.

Thanks to John Ristau, B Operator, City of Sebring, for submitting Question No.6

Please forward your comments and sample questions for publication to:

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