



## *Certification Boulevard · Answer Key*

### *Test Your Knowledge of Water Resources Management ... And Other Miscellaneous Wastewater Treatment Topics –*

1. What does the term aliquot mean:
  - A. Composite sample
  - B. Grab sample
  - C. The total volume of sample
  - D. A portion of a sample**
  
2. What are typical loading equivalents in domestic wastewater?
  - A. About 0.17 lbs BOD/person/day
  - B. About 0.2 lbs TSS/person/day
  - C. About 100 to 150 gal/person/day
  - D. All of the above**
  - E. None of the above
  
3. Given the following data, what percentage of CBOD<sub>5</sub> is removed in a primary clarifier?
  - Influent Flow 587 gpm
  - Influent CBOD<sub>5</sub> 250 mg/l
  - Primary Effluent CBOD<sub>5</sub> 175 mg/l
  - A. 25%
  - B. 30%**
  - C. 50%
  - D. 70%
  
4. Which types of bacteria are responsible for stabilization of organic material (CBOD<sub>5</sub>) in wastewater?
  - A. Nitrosomonas
  - B. Nitrobacter
  - C. Autotrophic
  - D. Heterotrophic**
  
5. Given the following data, how much alkalinity is consumed, using 7.2 lbs of ammonia converted?
  - Influent Flow is 10.5 mgd
  - Influent BOD<sub>5</sub> is 250 mg/l
  - Influent NH<sub>3</sub> is 19 mg/l
  - Aeration MLSS is 4,500 mg/l
  - Aeration MLSS is 74% Volatile
  - Effluent BOD<sub>5</sub> is 2.0 mg/l
  - Effluent NH<sub>3</sub> is 0.1 mg/l
  - A. 1,196 lbs
  - B. 19,160 lbs
  - C. 11,916 lbs**
  - D. 1,655 lbs

6. Which group of bacteria is responsible for converting  $\text{NO}_2$  to  $\text{NO}_3$ ?
- A. Heterotrophic  
 B. Nitrosomonas  
**C. Nitrobacter**  
 D. Fermenters
7. Given the following data, what is the HRT in days of an anaerobic digester?
- 75 Foot Diameter Tank
  - 23 Feet Sludge Depth
  - Digester Sludge Feed 15,500 gpd
- A. 62.6 days  
 B. 31.3 days  
**C. 49.0 days**  
 D. 36.2 days
8. What is the daily volume of WAS to be removed in a plant with 16,680 pounds of MLSS under aeration, a desired SRT of 15 days, and a WAS concentration of 10,000 mg/l?
- A. 12,356 gals/day  
 B. 7,439 gals/day  
**C. 13,333 gals/day**  
 D. 15,333 gals/day
9. The typical new residential home with an in-ground sprinkler system utilizes approximately 400 gpd of potable water for all uses (indoor and outdoor). The irrigation fraction of the domestic use is 50 percent of the total. Which of the following options provides the best method of water conservation?
- A. Provide 44 gpd of reclaimed water supply to each of these types of residential customers.
- B. Install low flush toilets to reduce the total in indoor use by 22 percent.
- C. Install low flow fixtures throughout the house to reduce the total residential demand by 11 percent.
- D. All of the above are equal in daily water savings.**

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.