

Whiz Quiz
Laboratory

1. You notice a co-worker entering lab data for a test you know he did not perform, what should you do?
 - A. Allow him to continue since, that is one less test you will need to perform
 - B. Volunteer to enter data for him, since that is less time you will be performing lab tests
 - C. Tell you supervisor
 - D. Do nothing, its not our responsibly to monitor the activities of others.

2. You are using a spectrophotometer to analyze samples for phosphorus. The range for the method is 0.2 mg/L - 1.10 mg/L. You obtain a result of 3.5 mg/l for a sample. What should you do?
 - A. Nothing, because properly calibrated instruments are very accurate
 - B. Dilute the sample and re-analyze
 - C. Ask your coworker to enter the 3.5 mg/L into the log book
 - D. Nothing, since 3.5 mg/L is still within the 10 times value rule.

3. Which of the following water tests require that a preservative be added?
 - A. Total residual chorine
 - B. pH
 - C. Alkalinity
 - D. TKN

4. When calibrating an instrument with a linear curve, what is the minimum of number of concentrations that must be used?
 - A. 1
 - B. 2
 - C. 3
 - D. 5

5. According to ANSI 358.1-1998, safety showers should be placed so that it not necessary to travel more than how may seconds?
 - A. 2 seconds
 - B. 10 seconds
 - C. 20 seconds
 - D. 30 seconds

6. What is the acceptance range for a BOD standard of GGA?
 - A. 198 +/- 10 mg/L
 - B. 198 +/- 30.5 mg/
 - C. 200 +/- 10 mg/L
 - D. 200 +/- 30.5 mg/L

7. If one of the samples for which you must determine BOD is a chlorinated effluent, you must remember to add _____ to the dilution water.
 - A. Sulfite
 - B. the four "buffers"
 - C. Seed

D. Thiosulfate

8. A wastewater plant is discharging a partially nitrified effluent. How might this impact the BOD test on the effluent?
- A. There is no impact as BOD measures only carbonaceous demand.
B. The BOD will be lower because the nitrate in the sample will inhibit bacteria.
C. The BOD will be higher due to the initial presence of ammonia and nitrifying bacteria.
D. Erroneous results will be obtained because nitrite will interfere with the DO determinations.
9. A settability test indicates that after 30 minutes, 205 ml of solids settle in the 1-liter graduated cylinder. If the mixed liquor suspended solids (MLSS) concentration in the aeration tank is 2,470 mg/L, what is the sludge volume index?
- A. 12
B. 41.5
C. 83 (reference detailed answer below)
D. 205
10. Results from a BOD test are given below. Calculate the BOD of the sample.
- Sample volume -10 ml
BOD bottle volume- 300 ml
Initial DO of diluted sample – 8.3 mg/L
Final DO of sample (after five days) – 4.2 mg/L
- A. 42 mg/L
B. 123 mg/L (reference detailed answer below)
C. 136 mg/L
D. Not enough data provided

ANSWER KEY				
1. C	2. B	3. D	4. C	5. B
6. B	7. A	8. C	9. C	10. B

Detailed answers:

9. A settability test indicates that after 30 minutes, 205 ml of solids settle in the 1-liter graduated cylinder. If the mixed liquor suspended solids (MLSS) concentration in the aeration tank is 2470 mg/L, what is the sludge volume index?

$$\frac{205 \text{ mL}}{2470 \text{ mg}} \quad \text{or} \quad \frac{205 \text{ ml}}{2.47 \text{ g}} = 83 \text{ SVI}$$

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- Sample volume -10 ml
BOD bottle volume- 300 ml
Initial DO of diluted sample – 8.3 mg/L
Final DO of sample (after five days) – 4.2 mg/L

$$\frac{8.3 \text{ mg/L} - 4.2 \text{ mg/L}}{\frac{10 \text{ ml}}{300 \text{ ml}}} = 123 \text{ mg/L BOD}$$