

1st Quarter 2018 Laboratory Quiz

By PWEA Laboratory Committee

1. Compliance monitoring analysis of wastewater _____.
 - a. can be performed by any method grandfathered by rule
 - b. can be performed by any method in Standard Methods
 - c. can be performed by any method in the 21th Edition of Standard Methods
 - d. can be performed by any method listed in 40 CFR 136

2. Burets are primarily used for _____.
 - a. Holding hair in place
 - b. Titrations
 - c. Measuring the temperature of an autoclave
 - d. Measuring the volume of a liquid

3. This standard solution is used to validate the BOD test conditions, reagents, and procedures:
 - a. Sodium thiosulfate
 - b. Glucose-Glutamic acid
 - c. Glucosamine Chondroitin
 - d. Phosphate buffer

4. _____ is a process using electromagnetic radiation (light) to measure an unknown analyte concentration.
 - a. Radiography
 - b. Microscopy
 - c. Gas chromatography
 - d. Spectrophotometry

5. The laboratory QA plan is a written document that includes:
 - a. Field sampling procedures;
 - b. Laboratory sample handling procedures;
 - c. Corrective action procedures
 - d. All of the above

6. Which of the following tests are examples of gravimetric analysis?
 - a. Total Suspended Solids and Mixed Liquor Suspended Solids
 - b. Total Suspended Solids and Total Dissolved Solids
 - c. Only a
 - d. Both a & b

7. What is the percent of BOD removed in a plant when the influent BOD is 245 mg/L and the effluent BOD is 12 mg/L?
- 95 %
 - 85 %
 - 75 %
 - 48 %
8. The ash content remaining at the end of a VSS test is the same as the:
- difference in raw sludge and the sludge after air drying
 - inorganic solids
 - organic solids
 - volatile solids
9. Jar tests may be used to determine the optimum dosage of:
- polymer
 - BOD
 - oil and grease
 - volatile acids
10. The settleability test indicates that after 30 minutes, 210 ml of sludge settled in the 1-liter graduated cylinder. If the mixed liquor suspended solids concentration (MLSS) in the aeration tank is 2200 mg/L, what is the sludge volume index or SVI?
- 10.4
 - 88
 - 95
 - None of the above

$$10. \text{SVI} = \frac{\text{volume (ml)}}{\text{Density (g)}} = \frac{210 \text{ ml}}{2200 \text{ mg}} \quad \text{or} \quad \frac{210 \text{ ml}}{2.2 \text{ g}} = 95 \text{ ml/g or } 95$$

Answer Key

- d
- b
- b
- d
- d
- d
- a
- b
- a
- c