PUBLIC HEALTH DIVISION
Drinking Water Services

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Practice Exam Small Water System Training Course

1. Routine coliform samples are handled in the following manner (choose one):
   a. At least three samples are required, and only after coliform is detected in a routine sample do you take this type of sample. Report results to Drinking Water Services (DWS) within 10 days
   b. Taken monthly or quarterly, results must be reported to DWS. Three temporary routine samples must be collected the month following any positive routine results for systems on quarterly sampling schedule.
   c. Taken after repairs or for other reasons

2. Repeat coliform samples are handled in the following manner (choose one):
   a. At least three are samples required, and only after coliform is detected in a routine sample do you take this type of sample. Report results to DWS within 10 days
   b. Taken monthly or quarterly, results must be reported to DWS. Three temporary routine samples must be collected the month following any positive routine results for systems on quarterly sampling schedule.
   c. Taken after repairs or for other reasons

3. Special coliform samples are handled in the following manner (choose one):
    a. At least three samples are required, and only after coliform is detected in a routine sample do you take this type of sample. Report results to DWS within 10 days
    b. Taken monthly or quarterly, results must be reported to DWS. Three temporary routine samples must be collected the month following any positive routine results for systems on quarterly sampling schedule.
    c. Taken after repairs or for other reasons

4. The coliform sampling plan guides the water operator to preselected sampling locations. Having preselected locations ensures coliform testing is conducted at representative points throughout the system
    a. True
    b. False

5. Total coliforms (TC) stay in water longer than most pathogenic (disease-causing) organisms. Elevated levels of coliform bacteria suggest problems in the system. TC may be introduced into water from runoff, infiltration, leaching, inadequate disinfection, and other sources.
    a. True
    b. False

6. Coliform samples collected in the distribution system must be representative of the *entire* system over the course of a year. A water system needs to identify *routine* sample site locations as well as *repeat* sample locations that correspond to each routine site.
    a. True
    b. False

7. For a system without disinfection, what action needs to be taken after a routine positive coliform sample? (choose one)
    a. Regulatory agency must be notified within 24 hours.
    b. Repeat and triggered source samples must be taken within 24 hours.
    c. Laboratories must report all positive results to DWS within 24 hours.
    d. All of the above must occur before corrective action takes place

8. How are samples for lead and copper collected in a water system? (choose one)
    a. Get sample kits from the lab and instruct customers on how to take the sample.
    b. Must be a “first draw” sample from a representative drinking water faucet with a 6+ hour water detention time before the first draw.
    c. Fill out “chain of custody.” and collect the samples. Then fill out the laboratory form. Submit to laboratory for analysis**.**
    d. All of the above are done (ideally in the order presented).

9. A consumer confidence report (CCR) is an annual report to customers on the system’s water source, water quality, and operations. It is required for all community water systems.
    a. True
    b. False

10. What is the definition of a *chlorine dose*? (choose one)
    a. The amount of chlorine that is added to a water sample.
    b. The amount of chlorine that is used up in inactivating microorganisms
    c. The amount of chlorine that is left over after the microorganisms are inactivated

11. What is the definition of *chlorine demand*? (choose one)
    a. The amount of chlorine that is added to a water sample.
    b. The amount of chlorine that is used up in inactivating microorganisms
    c. The amount of chlorine that is left over after the microorganisms are inactivated

12. What is the definition of *chlorine residual*? (choose one)
    a. The amount of chlorine that is added to a water sample.
    b. The amount of chlorine that is used up in inactivating microorganisms
    c. The amount of chlorine that is left over after the microorganisms are inactivated

13. What is the correct type of chlorine to use for disinfection in a small water system? (choose one)
    a. Liquid sodium hypochlorite at 12.5 and 15%
    b. Powder or tablet calcium hypochlorite (commonly contains about 65% chlorine by weight)
    c. Both of the above are common types of chlorine used in small water system disinfection.

14. Which statement about UV disinfection is correct? (choose one)
    a. It requires long contact times for effective disinfection.
    b. It provides chlorine residual in the distribution system.
    c. It does not create disinfection byproducts, requires a minimum dosage of 38 mW/cm^2, and will commonly shut down when the lamp fails.
    d. All of these statements are correct.

15. Corrosion control is the responsibility of the water system.
    a. True
    b. False

16. Arsenic in a water system can cause health problems.
    a. True
    b. False

17. Suggested steps for developing an Operation and Maintenance (O&M) Manual include differentiating daily, weekly, monthly, and semiannual tasks for which of the following aspects of the system? (choose one)
    a. System facilities, operational personnel
    b. Routine operational tasks, regulatory operational tasks
    c. Maintenance and compliance procedures
    d. Troubleshooting operational problems
    e. All of the above

18. Water system records (operation and maintenance logs and schedule along with equipment conditions) should be kept as long as legally required and deemed useful. If records are not in place, the institutional knowledge base built by your staff could be lost forever.
    a. True
    b. False

19. DWS maintains a technical bulletin on well disinfection on their web page, which provides step-by-step instructions on how to properly disinfect a well. When shock chlorination becomes necessary, this document should be consulted.
    a. True
    b. False

20. A public water system's distribution piping must be designed and installed to ensure a minimum pressure of at least 20 psi throughout the distribution system, under all conditions of flow.
    a. True
    b. False

21. Pressure is measured in *pounds per square inch* (psi). Typical conversions include:

    1 psi = 2.31 feet of water
    1 foot of water = 0.433 psi

    a. True
    b. False

22. Exercising valves is typically part of a line flushing program. Ideally, flush lines at night and exercise valves at least once a year.
    a. True
    b. False

23. Operators should know the water storage capacity of their systems.
    a. True
    b. False

24. After a storage tank has been drained and cleaned, it should be disinfected using chlorine (AWWA C652). What is Method A for disinfecting tanks? (choose one)
    a. Add 50 ppm chlorine solution, allow to stand for 6 hours.
    b. Add 10 ppm chlorine solution, allow to stand for 24 hours.
    c. Direct spray 200 ppm chlorine solution, allow to remain for 30 minutes prior to filling the tank.

25. After a storage tank has been drained and cleaned, it should be disinfected using chlorine (AWWA C652). What is Method B for disinfecting tanks? (choose one)
    a. Add 50 ppm chlorine solution, allow to stand for 6 hours.
    b. Add 10 ppm chlorine solution, allow to stand for 24 hours.
    c. Direct spray 200 ppm chlorine solution, allow to remain for 30 minutes prior to filling the tank.

26. After a storage tank has been drained and cleaned, it should be disinfected using chlorine (AWWA C652). What is Method C for disinfecting tanks? (choose one)
    a. Add 50 ppm chlorine solution, allow to stand for 6 hours.
    b. Add 10 ppm chlorine solution, allow to stand for 24 hours.
    c. Direct spray 200 ppm chlorine solution, allow to remain for 30 minutes prior to filling the tank.

27. A water system survey is a detailed on-site review of the water sources, facilities, equipment, operation, and maintenance of the water system.
    a. True
    b. False

28. All water systems need a written coliform sampling plan, written operator contact information, and a written emergency response plan (ERP).
    a. True
    b. False

29. Do the best you can with the documents you have when attempting to create a map of your distribution system.
    a. True
    b. False

30. Keeping a daily logbook of all water system activities can be very beneficial.
    a. True
    b. False

31. Good housekeeping (keeping equipment and supplies organized and cleaned and keeping all possible contaminants away from or out of the wellhouse) is a necessary function of a small water system operator.
    a. True
    b. False

32. Repairs and monitoring of your distribution system should be recorded in your daily logs.
    a. True
    b. False

33. In-ground irrigation systems, private groundwater wells or other alternate sources of water, and domestic booster pumps are potential locations for cross-connection control devices.
    a. True
    b. False

34. Reverse direction of flow from the water's intended direction is called backflow.
    a. True
    b. False

35. In Oregon, backflow prevention assemblies need to be tested every two months.
    a. True
    b. False

36. The state requires community water systems to submit a cross-connection control annual summary report.
    a. True
    b. False

37. The acronym MCL stands for *maximum contaminant level*.
    a. True
    b. False

38. A chronic contaminant means that you experience onset symptoms quickly after consumption. Acute exposure can occur over longer time periods.
    a. True
    b. False

39. If your system chlorinates, then you are required to keep records of free chlorine residuals.
    a. True
    b. False

40. Collect total coliform samples early in the month, early in the week, and early in the day. By sampling early in the sampling period, you'll receive results earlier; in the event of a positive result you'll have plenty of time to take action.
    a. True
    b. False

41. What are the two most common forms of NSF chlorine used by small water system operators? (choose one)
    a. Sodium hypochlorite
    b. Calcium hypochlorite
    c. Both forms are common forms of chlorine that were discussed in the training class.

42. What is the dry tablet form of chlorine used for disinfection? (choose one)
    a. Sodium hypochlorite
    b. Calcium hypochlorite, also called high test hypochlorite (HTH)
    c. Chlorine gas.
    d. Chloroform

43. What is the liquid form of chlorine used for disinfection? (choose one)
    a. Sodium hypochlorite
    b. Calcium hypochlorite, also called high test hypochlorite (HTH)
    c. Chlorine gas.
    d. Chloroform

44. You can use non-NSF certified store-bought bleach to treat a water system.
    a. True
    b. False

45. UV disinfection leaves no chlorine residual.
    a. True
    b. False

46. Iron and manganese in drinking water can lead to stains in consumers' sinks, toilets, and bathtubs.
    a. True
    b. False

47. An ERP should include a contact list (including phone numbers) of people and organizations who can help in an emergency.
    a. True
    b. False

48. The contact information in your ERP can go out of date quickly, so it should be checked often and updated as necessary.
    a. True
    b. False

49. It's best to have backup copies of all water system records stored off site in case a fire or other event damages records stored at water system facilities.
    a. True
    b. False

50. Line flushing should be done when water consumption is low.
    a. True
    b. False

51. When conducting line flushing, the operator should open and close the system valves slowly to prevent water hammer.
    a. True
    b. False

52. Storage tanks can be sanitized using three methods. Method A is to add 10 mg/L chlorine and let stand for 24 hours. Method B is to add 50 mg/L chlorine for 6 hours. Method C requires 200 mg/L chlorine for 30 minutes. All methods require NSF chlorine to be used.
    a. True
    b. False