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PRACTICE QUESTIONS

Association of Boards of Certification

WZ9825TD

WPI Water Distribution Class 1-OIT

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Association of Boards of Certification WZ9825TD, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, WZ9825TD
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

Water Distribution Operator Class 1 candidates must understand the relationship between turbidity and disinfection. Which statement best describes why operators monitor distribution system turbidity?

- ☐ A Turbidity is measured only at the source and has no effect on chlorine residual.
- ☒ B High turbidity in the distribution system can shield microorganisms from disinfection and signal a potential breach in system integrity.
- ☐ C Turbidity is a direct measurement of chlorine demand and increases only when chlorine is added.
- ☐ D Turbidity readings are used solely to calculate customer billing.

ANSWER B

WHY Turbidity is monitored throughout the distribution system because particles can shield pathogens from chlorine and other disinfectants, and sudden increases may indicate contamination, pipe breaks, or other integrity issues. Option A is incorrect because turbidity is monitored throughout the system, not just at the source. Option C is incorrect because turbidity measures suspended particles, not chlorine demand. Option D is incorrect because turbidity is not used for billing.

QUESTION 2

SINGLE CHOICE

A water distribution operator needs to take a section of pipe out of service for maintenance. Which type of valve is most appropriate for isolating a section of distribution main from the rest of the system?

- ☐ A Pressure-reducing valve
- ☐ B Air-vacuum relief valve
- ☒ C Gate valve
- ☐ D Check valve

ANSWER C

WHY Gate valves are the standard isolation valves in water distribution mains. They are designed for fully open or fully closed positions and provide minimal pressure loss when open. Pressure-reducing valves regulate downstream pressure, air-vacuum relief valves release or admit air, and check valves prevent reverse flow—none of these are appropriate for routine isolation.

QUESTION 3

SINGLE CHOICE

A distribution operator measures a free chlorine residual of 0.1 mg/L in a part of the system. What is the most appropriate immediate action?

- ☐ A Document the reading and continue routine sampling only.
- ☒ B Notify the appropriate authority and take corrective action to restore an adequate residual throughout the affected area.
- ☐ C Shut down the entire water treatment plant until residuals return to normal.
- ☐ D Increase the pumping rate of the lowest-pressure pump only.

ANSWER B

WHY An inadequate free chlorine residual (typically below 0.2 mg/L at the tap) can compromise disinfection and signal the need for corrective action such as flushing, booster chlorination, or repair of a main, along with required notification under the system's operating plan. Simply documenting the low reading (A) does not address the problem. Shutting down the entire treatment plant (C) is not warranted and would create a larger problem. Adjusting only one pump (D) does not address the underlying chemical or hydraulic cause.

QUESTION 4

SINGLE CHOICE

If the flow rate through a pipe is doubled while the pipe diameter and length remain unchanged, what happens to the head loss due to friction?

- ☐ A It stays the same.
- ☐ B It doubles.
- ☒ C It increases by a factor of four or more, depending on the flow regime.
- ☐ D It is reduced to one-half.

ANSWER C

WHY For turbulent flow (typical in water mains), head loss due to friction is roughly proportional to the square of the velocity, so doubling flow can increase head loss by roughly four times or more. This is why operators cannot simply increase pump output to deliver more water without accounting for significantly higher friction losses.

QUESTION 5

SINGLE CHOICE

Which backflow prevention device is generally required where a potable water line connects to a fire suppression system that uses chemical additives?

- ☐ A Double check valve assembly (DCVA)
- ☒ B Reduced pressure principle (RP) backflow preventer
- ☐ C Atmospheric vacuum breaker (AVB)
- ☐ D Pressure vacuum breaker (PVB)

ANSWER B

WHY An RP backflow preventer provides the highest level of protection and is required where the potential hazard is high, such as on fire systems with chemical additives or antifreeze. A DCVA is acceptable for non-health hazards only. AVBs and PVBs are testable but typically used for irrigation systems at lesser hazard connections.

QUESTION 6

SINGLE CHOICE

What is the primary purpose of a fire hydrant flow test?

- ☐ A To verify the chlorine residual in the distribution main.
- ☒ B To determine the available flow and residual pressure in the distribution system for firefighting and planning purposes.
- ☐ C To measure the turbidity at the hydrant.
- ☐ D To check the temperature of the water in the main.

ANSWER B

WHY Fire hydrant flow tests measure available flow at a given residual pressure so the utility and fire department can evaluate firefighting capacity, classify hydrants, and plan system improvements. Chlorine residual, turbidity, and temperature are not the primary purposes of a flow test.

QUESTION 7

SINGLE CHOICE

A distribution operator is performing routine inspection of an elevated storage tank. Which condition is most likely to require immediate corrective action?

- ☐ A Minor paint oxidation on the exterior ladder cage.
- ☒ B Visible signs of overflow, structural deformation, or significant corrosion on the access hatch.
- ☐ C Routine interior inspection markings on the riser pipe.
- ☐ D Normal condensation on the tank exterior on a cool morning.

ANSWER B

WHY Overflow events, structural deformation, or significant corrosion on hatches can compromise tank integrity, sanitary condition, and structural safety, and require immediate action. Minor paint oxidation, routine inspection markings, and exterior condensation are normal and addressed during routine maintenance cycles.

QUESTION 8

SINGLE CHOICE

An operator must enter a below-grade vault to close a valve. Which safety practice is required before entry?

- ☐ A Only wearing a high-visibility vest.
- ☒ B Testing the atmosphere for oxygen and hazardous gases and ensuring proper ventilation.
- ☐ C Operating the valve from outside while wearing hearing protection.
- ☐ D Lifting the lid and entering immediately to minimize traffic disruption.

ANSWER B

WHY Below-grade vaults are permit-required confined spaces. The atmosphere must be tested for oxygen levels and hazardous gases, and continuous ventilation must be provided before and during entry. A high-visibility vest does not address atmospheric hazards. Operating the valve from outside (if possible) is acceptable, but the question addresses entry, so the required step is atmospheric testing. Entering immediately without testing is dangerous and prohibited.

QUESTION 9

SINGLE CHOICE

Which characteristic is most associated with surface water sources compared to groundwater sources?

- ☐ A Generally more consistent water temperature throughout the year
- ☐ B Generally higher mineral content and hardness
- ☒ C More variable turbidity that can change rapidly with rainfall
- ☐ D Naturally filtered and free of microbial contamination

ANSWER C

WHY Surface water (rivers, lakes, reservoirs) is exposed to runoff and weather, so turbidity levels can change quickly, especially after storms. Groundwater is filtered through soil and tends to have more stable temperature and chemistry.