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PRACTICE QUESTIONS

Certification Commission for Environmental Professionals

AAGYZZ22

C2EP Water Distribution Operator Class 1

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Certification Commission for Environmental Professionals AAGYZZ22, 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, AAGYZZ22
- the question number
- the email address on your order

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

QUESTION 1

SINGLE CHOICE

An operator samples raw water entering the treatment plant. The source is a deep aquifer accessed through a series of wells. Which characteristic is most typical of this type of source water compared to surface water?

- ☐ A Higher concentration of suspended solids and turbidity
- ☐ B Greater seasonal variation in temperature
- ☒ C More consistent chemical quality and typically higher dissolved mineral content
- ☐ D Greater susceptibility to contamination from surface runoff events

ANSWER C

WHY Groundwater (deep aquifer) typically has more consistent water quality year-round, lower turbidity and suspended solids, and higher dissolved mineral content due to contact with subsurface geological formations. Surface water is more variable, often carries more suspended material, and is more affected by runoff and seasonal temperature changes.

QUESTION 2

SINGLE CHOICE

A customer has an irrigation system connected to the potable water service line. To protect the public water system from contamination due to backsiphonage, which device should the water utility typically require on the irrigation connection?

- ☐ A Pressure relief valve
- ☒ B Reduced pressure principle backflow preventer
- ☐ C Check valve only
- ☐ D Air gap vacuum breaker

ANSWER B

WHY For an irrigation system (a higher hazard than a simple hose connection due to chemical injection potential and submerged outlets), the typical cross-connection control device is a Reduced Pressure Principle (RP) backflow preventer. A pressure vacuum breaker would be inadequate for continuous pressure applications, and a single check valve is not considered adequate backflow protection.

QUESTION 3

SINGLE CHOICE

Which of the following is the best example of a non-point source of water pollution that could affect a surface water supply reservoir?

- ☐ A A single industrial pipe discharging treated wastewater at one location
- ☒ B Agricultural runoff carrying fertilizers across multiple fields before reaching a stream
- ☐ C Effluent leaving a wastewater treatment plant outfall
- ☐ D A specific NPDES-permitted discharge from a factory

ANSWER B

WHY Non-point source (NPS) pollution originates from diffuse, widespread sources such as agricultural runoff, urban stormwater, and atmospheric deposition — not from a single identifiable discharge point. Agricultural runoff is a classic NPS example because pollutants enter water over broad areas. The other options describe point sources, which are discharges from a single, identifiable location (and would typically be regulated under an NPDES permit).

QUESTION 4

SINGLE CHOICE

A storage tank at the treatment plant allows the water system to meet variable daily demand. Which function does a ground-level storage reservoir primarily provide for a water distribution system?

- ☐ A Increasing the system pressure beyond the capability of the pumps
- ☐ B Contact time for disinfection reactions before water is delivered
- ☒ C Equalizing storage to buffer fluctuations between supply and demand
- ☐ D Reducing disinfection byproducts by aeration

ANSWER C

WHY Clearwells and ground-level storage reservoirs at treatment plants primarily provide operational storage, equalization storage to buffer variable demand, and contact time for disinfection. The question specifies a storage tank's primary role of balancing variable hourly demand with the relatively constant production rate from the plant.

QUESTION 5

SINGLE CHOICE

An operator notes that an elevated storage tank on the system has dropped approximately 8 feet in level overnight, even though the high- and low-service pumps appear to be operating correctly and customer demand is low. Which action is most appropriate as a first response?

- ☐ A Immediately close all distribution valves until the tank refills
- ☒ B Investigate for a main break or large leak contributing to the unexplained loss
- ☐ C Increase the chlorination dose to ensure residual in the lost water
- ☐ D Bypass the tank and supply the system directly from the treatment plant

ANSWER B

WHY Unexplained tank losses — water leaving the system that is not accounted for by normal demand, reported breaks, or authorized use — indicate potential leaks, main breaks, or unauthorized use (e.g., illegal hydrant taps). The standard first operator action is to investigate the distribution system for the source of the loss.

QUESTION 6

SINGLE CHOICE

During a routine maintenance program, an operator systematically opens and closes each valve in the distribution system following an established schedule. What is the primary purpose of this activity?

- ☐ A To verify that chlorine residual is maintained throughout the distribution system
- ☒ B To ensure the valve is operational, accessible, and can be located for emergencies
- ☐ C To increase water flow velocity and reduce biofilm in the mains
- ☐ D To measure customer service pressure at each valve location

ANSWER B

WHY Valve exercising is performed on a routine schedule to confirm valves operate, to keep operating nut and stem threads free, to detect leaks, and to ensure valves can be found and operated quickly in an emergency. Flushing is the activity most associated with increased flow and biofilm control.

QUESTION 7

SINGLE CHOICE

A distribution operator is reviewing a hydrant flow test report. Under the Hazen-Williams equation, which change to a pipe would most directly reduce friction head loss in a water main, assuming flow rate is held constant?

- ☐ A Slightly decreasing the pipe diameter
- ☒ B Increasing the pipe diameter
- ☐ C Increasing water velocity
- ☐ D Doubling the pipe length without changing diameter

ANSWER B

WHY Friction head loss in a pipe varies approximately with the inverse fifth power of diameter in the Hazen-Williams relationship. A modest increase in pipe diameter produces a large reduction in friction loss and therefore more delivered pressure/flow at the same pump input. Decreasing diameter and increasing velocity both increase head loss.

QUESTION 8

TRUE FALSE

An air gap separation between a potable water supply and a non-potable source is considered one of the most reliable methods of backflow prevention.

- ☒ A True
- ☐ B False

ANSWER A

WHY True. An air gap — a physical separation between the end of the potable supply pipe and the flood rim of the receiving vessel or fixture — is generally regarded as the most reliable and oldest method of backflow prevention because no mechanical device is required and both backsiphonage and backpressure backflow are prevented as long as the separation is maintained.

QUESTION 9

MULTIPLE CHOICE

A Class 1 operator is performing routine free chlorine residual monitoring in the distribution system. Which two locations are considered the most representative points for determining that an acceptable disinfectant residual is being maintained throughout the system? (Choose two.)

- ☐ **A** Sampling taps located at the treatment plant finished water tap only
- ☒ **B** Points in the distribution system that are farthest from the treatment plant and/or storage facilities (dead-end mains)
- ☐ **C** The raw water intake before any treatment
- ☒ **D** Dedicated routine sampling sites representative of the system's water quality, including areas of high water age

ANSWER B • D

WHY Disinfectant residual monitoring must verify protection throughout the system, not just at the plant. The highest-risk areas for residual loss are points with the longest detention time — typically remote ends of the system, dead-end mains, and areas of high water age near storage facilities. The raw water intake (C) is not disinfected finished water, and sampling only at the plant tap (A) does not reflect conditions in the distribution network.