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PRACTICE QUESTIONS

California - Nevada Section American Water Works Association

M8ABX9WD

CA-NV AWWA BPAT New Candidate Combined

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for California - Nevada Section American Water Works Association M8ABX9WD, 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, M8ABX9WD
- the question number
- the email address on your order

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

QUESTION 1

SINGLE CHOICE

Which of the following best defines backflow as it relates to a public water system?

- ☐ A A sudden increase in system pressure caused by a fire hydrant being opened.
- ☒ B A reversal of the normal direction of water flow within a piping system, allowing contaminants to enter the potable supply.
- ☐ C The flow of water from a customer's plumbing into the distribution main during peak demand.
- ☐ D The loss of water pressure in a service line due to a main break downstream.

ANSWER B

WHY Backflow is defined as the undesirable reversal of flow of water (or other substances) into the potable water distribution system. This reversal can allow contaminants or pollutants to enter the public water supply, which is why backflow prevention assemblies are required.

QUESTION 2

SINGLE CHOICE

Backpressure backflow can occur when which of the following conditions exists on a customer's premises?

- ☐ A The downstream water pressure in the service is lower than the supply pressure at the meter.
- ☒ B A boiler, pump, or other equipment creates pressure higher than the incoming potable supply pressure.
- ☐ C A water main breaks and creates negative pressure in the distribution system.
- ☐ D A fire hydrant is opened during flow testing.

ANSWER B

WHY Backpressure is caused when a customer's equipment (booster pump, boiler with higher operating pressure, elevated tank, etc.) creates pressure on the customer's side of the meter that exceeds the potable water supply pressure, pushing water backward into the distribution system.

QUESTION 3

SINGLE CHOICE

What is a cross-connection in a potable water system?

- ☐ A A physical connection between two adjacent water meters on the same service line.
- ☒ B Any actual or potential connection between a potable water system and a non-potable source that could contaminate the potable supply.
- ☐ C A pipe that crosses over a sewer line in a trench.
- ☐ D The interconnection of two separate pressure zones within the distribution system.

ANSWER B

WHY A cross-connection is any real or potential link between a potable water system and a source of contamination or pollution. Cross-connections must be protected (typically by an approved backflow preventer) to keep the public water system safe.

QUESTION 4

SINGLE CHOICE

Which backflow prevention assembly is generally required for protection against backpressure and backsiphonage at a service connection where the customer's water use is determined to be a high health hazard?

- ☐ A A Double Check Detector Assembly (DCDA).
- ☒ B A Reduced Pressure Principle Backflow Prevention Assembly (RP).
- ☐ C A Pressure Vacuum Breaker (PVB).
- ☐ D An Atmospheric Vacuum Breaker (AVB).

ANSWER B

WHY The Reduced Pressure Principle (RP) assembly is the highest-lying backflow preventer typically approved for cross-connection control and is used for high-hazard installations. It protects against both backsiphonage and backpressure, unlike the PVB or AVB which only protect against backsiphonage, and unlike the DC which is not approved for high-hazard applications.

QUESTION 5

SINGLE CHOICE

An atmospheric vacuum breaker (AVB) installed on a lawn irrigation system must meet which of the following installation requirements?

- ☐ A It must be installed at least 12 inches above the highest downstream piping or outlet.
- ☒ B It must be installed at least 6 inches above the highest downstream piping or outlet, and it cannot be subjected to continuous pressure.
- ☐ C It must be installed below grade in a meter box for freeze protection.
- ☐ D It must be installed on a pressurized loop to maintain constant downstream pressure.

ANSWER B

WHY An atmospheric vacuum breaker (AVB) must be installed a minimum of 6 inches above the highest point of downstream piping and must not remain under continuous pressure (it must be installed on the discharge side of the last control valve). These requirements apply to lawn irrigation as well as any AVB installation.

QUESTION 6

SINGLE CHOICE

Backflow prevention assemblies installed on a potable water service are typically required to be approved by which of the following organizations?

- ☐ A Underwriters Laboratories (UL) only.
- ☒ B The Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR) at USC, in conjunction with USC's approved list, or other recognized authority such as ASSE.
- ☐ C The local building department's plumbing division alone.
- ☐ D The Federal Environmental Protection Agency (EPA) only.

ANSWER B

WHY Assemblies must meet recognized industry standards such as those developed by ASSE (American Society of Sanitary Engineering) and, for assemblies on USC's approved list, be tested and listed by the Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR). California and Nevada water utilities typically require USC-approved or ASSE-approved assemblies.

QUESTION 7

SINGLE CHOICE

During the annual field test of a Reduced Pressure Principle (RP) backflow prevention assembly, what condition indicates the assembly has passed the check valve and relief valve portion of the test?

- ☐ A The differential pressure relief valve opens continuously under all test conditions.
- ☒ B The first check valve holds a tight differential of at least 5 psi over inlet pressure, and the relief valve opens when the differential between the first and second checks is reduced to 2 psi or less.
- ☐ C The shutoff valves on either side of the assembly must be removed before testing.
- ☐ D The second check valve must drop its pressure reading to zero before the relief valve opens.

ANSWER B

WHY Standard field test procedures for an RP require verifying that the first check valve holds at least 5 psi differential across it (tight) and that the relief valve opens when the pressure differential between the two checks is reduced to approximately 2 psi or less. These specific criteria come from the FCCCHR and AWWA test procedures.

QUESTION 8

SINGLE CHOICE

Which of the following situations would generally be classified as a high (health) hazard requiring premises isolation with an approved backflow preventer?

- ☐ A A single-family residence with no auxiliary water supply.
- ☒ B A hospital with on-site dialysis, laboratories, and a boiler chemical treatment loop.
- ☐ C An office building with restroom and drinking fountain use only.
- ☐ D A lawn-irrigated park using potable water with no chemical injection.

ANSWER B

WHY Facilities such as hospitals have many actual or potential cross-connections (medical equipment, lab piping, boilers with chemical treatment) and are classified as high health hazards. They require premises isolation with an RP assembly, at minimum, to protect the public water system. The other options listed are either low or moderate hazards, or would have more limited isolation requirements.

QUESTION 9

MULTIPLE CHOICE

Which of the following are recognized causes of backsiphonage in a potable water distribution system? (Choose two.)

- ☐ A A fire hydrant being opened for fire flow, creating high demand downstream.
- ☒ B A water main break causing negative pressure in the surrounding area.
- ☐ C A booster pump installed on the customer side that exceeds supply pressure.
- ☒ D A high-velocity pump shutoff or simultaneous opening of a large number of hydrants during flushing operations.
- ☐ E A customer's elevated rooftop storage tank that sits higher than the meter.

ANSWER B - D

WHY Backsiphonage is caused by negative or sub-atmospheric pressure in the distribution system. Common causes include water main breaks, high-velocity flow during flushing, firefighting demand, and pump shutoffs that create pressure transients. Customer-side booster pumps and elevated tanks are causes of backpressure, not backsiphonage.