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36	A	B	C	D	E
37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E

PRACTICE QUESTIONS

California - Nevada Section American Water Works Association

FMB966HV

CA-NV AWWA Water Use Efficiency Grade 1

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 FMB966HV , 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, FMB966HV
- the question number
- the email address on your order

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

QUESTION 1

SINGLE CHOICE

What is the primary goal of a Water Use Efficiency (WUE) program at a water utility?

- ☐ A To maximize the volume of water sold to customers each year.
- ☒ B To reduce water waste and ensure sustainable, reliable water supplies for current and future users.
- ☐ C To eliminate all non-essential outdoor water use.
- ☐ D To increase the number of metered service connections regardless of consumption.

ANSWER B

WHY A Water Use Efficiency program focuses on reducing waste, improving productivity of water use, and ensuring sustainable supplies. Option A is the opposite of efficiency; option C is too extreme and not the goal of WUE; option D ignores the efficiency component entirely.

QUESTION 2

SINGLE CHOICE

In a standard urban water balance, which component represents water that is delivered to customers, billed (metered or unmetered), and authorized for use?

- ☐ A Real losses
- ☐ B Apparent losses
- ☒ C Authorized consumption
- ☐ D Unbilled authorized consumption

ANSWER C

WHY Authorized consumption includes all billed authorized consumption (metered and unmetered) plus unbilled authorized consumption. Real losses are physical losses from the system; apparent losses are metering inaccuracies and unauthorized consumption. Therefore, water that is delivered, billed, and authorized falls under authorized consumption.

QUESTION 3

SINGLE CHOICE

Which of the following is classified as an apparent loss in a water distribution system?

- ☐ A Leakage from a broken transmission main before the customer meter.
- ☐ B Water that evaporates from an open reservoir.
- ☒ C Inaccurate customer meters under-registering consumption.
- ☐ D Overflow from a storage tank caused by a faulty float valve.

ANSWER C

WHY Apparent losses are non-physical losses caused by metering inaccuracies, unauthorized consumption, and systematic data handling errors. Under-registering meters fall under metering inaccuracy, which is an apparent loss. Options A, B, and D describe real losses — physical water escaping the system.

QUESTION 4

SINGLE CHOICE

The Infrastructure Leakage Index (ILI) is calculated as which of the following?

- ☒ A Current Annual Real Losses (CARL) divided by the Unavoidable Annual Real Losses (UARL).
- ☐ B Annual Real Losses divided by the length of mains.
- ☐ C Total system input volume divided by billed authorized consumption.
- ☐ D Apparent losses divided by real losses.

ANSWER A

WHY The ILI is a dimensionless ratio of Current Annual Real Losses (CARL) to Unavoidable Annual Real Losses (UARL), as defined by the American Water Works Association in the M36 methodology. Option B describes a different performance indicator; option C relates to a non-revenue water ratio; option D has no standard definition.

QUESTION 5

SINGLE CHOICE

Which of the following is a customer-side best management practice (BMP) used to reduce indoor residential water use?

- ☐ A Pressure reducing valves on customer service lines.
- ☒ B Installing high-efficiency toilets (HETs) and faucet aerators.
- ☐ C Replacing old cast-iron mains.
- ☐ D Sliplining deteriorated sewer pipes.

ANSWER B

WHY Customer-side BMPs target end-use fixtures and appliances. High-efficiency toilets and faucet aerators reduce indoor residential water consumption. The other options are utility-side distribution system BMPs, not customer-side BMPs.

QUESTION 6

SINGLE CHOICE

Which measurement and verification (M&V) option, as referenced by the AWWA M36 methodology and similar protocols, generally provides the highest level of accuracy in quantifying water savings from a retrofit program?

- ☐ A Option A — Engineering estimate using stipulated parameters.
- ☐ B Option B — Retrofit isolation with key parameter measurement.
- ☒ C Option C — Whole-facility measurement with calibrated simulation.
- ☐ D Option D — Customer self-reporting of fixture counts.

ANSWER C

WHY M&V Option C involves whole-facility measurement using calibrated simulation models, and is considered the most accurate (and most expensive) approach. Option A is the least accurate but lowest cost; Option B is intermediate; Option D is not a recognized formal M&V option.

QUESTION 7

SINGLE CHOICE

According to AWWA's Water Audit Methodology (M36), what is the first step in conducting a water audit?

- ☐ A Calculate the Infrastructure Leakage Index.
- ☒ B Identify the components of the water balance for the audit period.
- ☐ C Develop a leak detection survey plan.
- ☐ D Implement a conservation rate structure.

ANSWER B

WHY The AWWA M36 methodology begins with assembling the water balance components (system input volume, authorized consumption, water losses) for a defined audit period. The ILI is calculated later in the audit; leak detection and rate structure changes are downstream actions, not the first step.

QUESTION 8

SINGLE CHOICE

Which leak detection method uses acoustic sensors attached to valves or fittings to identify the sound of water escaping from pipes?

- ☐ A Step testing
- ☒ B Sounding with electronic/geophone listening devices
- ☐ C Visual surface inspection only
- ☐ D Meter data analytics alone

ANSWER B

WHY Electronic listening devices such as geophones, hydrophones, and correlators detect the acoustic signature of leaks by amplifying the sound of escaping water at fittings and valves. Step testing isolates leaks by analyzing night flow changes in sub-zones; visual inspection alone and meter analytics are not the primary acoustic methods.

QUESTION 9

MULTIPLE CHOICE

Which of the following are components of authorized consumption in a water balance? (Choose two.)

- ☒ **A** Billed metered consumption
- ☒ **B** Unbilled authorized consumption (e.g., firefighting, flushing)
- ☐ **C** Apparent losses
- ☐ **D** Real losses

ANSWER **A - B**

WHY Authorized consumption = Billed authorized consumption + Unbilled authorized consumption. Billed consumption can be metered or unmetered, and unbilled authorized consumption includes uses such as firefighting, flushing, and municipal landscaping. Apparent losses and real losses together make up water losses, not authorized consumption.