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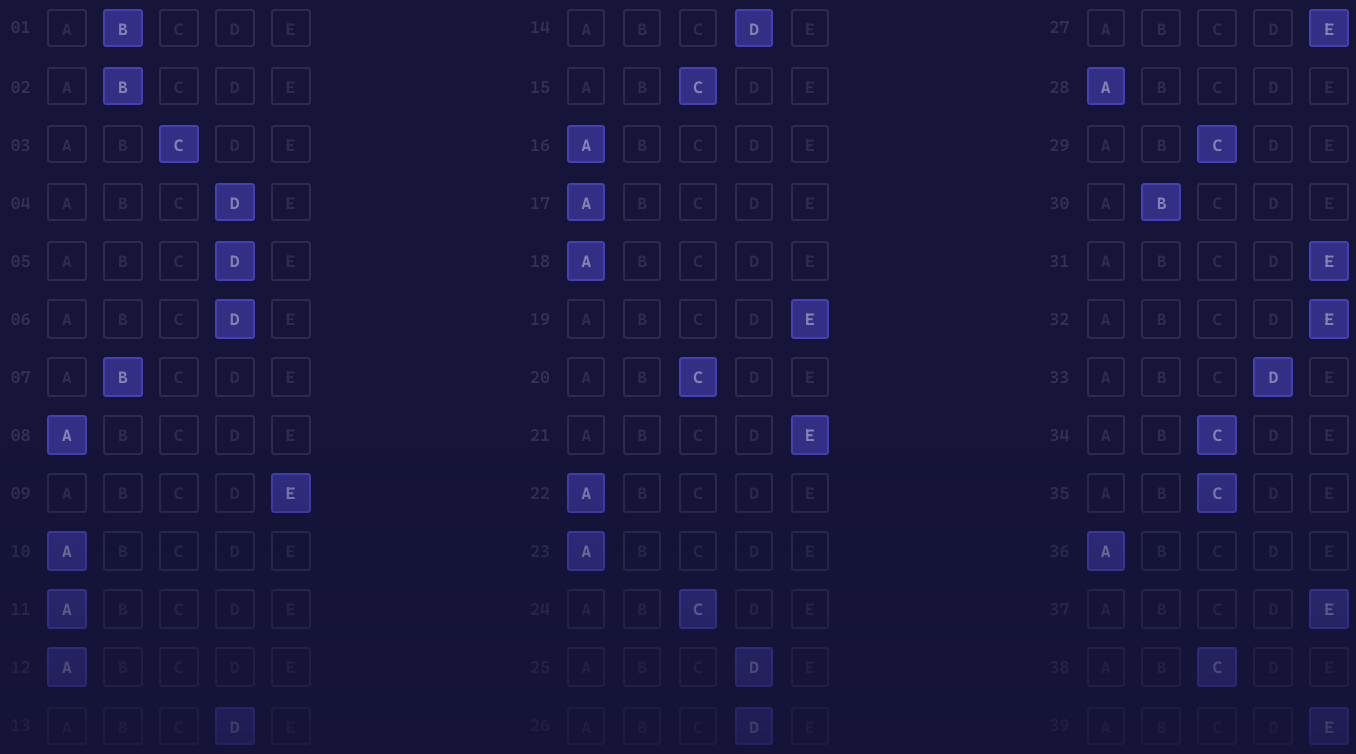

PRACTICE QUESTIONS

California - Nevada Section American Water Works Association

RZH7TTA3

CA-NV AWWA Water Use Efficiency Grade 2

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

Before you begin

What this is

9 practice questions for California - Nevada Section American Water Works Association `RZH7TTA3`, 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, `RZH7TTA3`
- the question number
- the email address on your order

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

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QUESTION 1 SINGLE CHOICE

In a standard AWWA water audit, which loss component is defined as water that reaches customers but is not measured due to meter under-registration, data errors, or unauthorized consumption?

A Real losses

B Apparent losses

C Unauthorized consumption

D System input volume

ANSWER B

WHY Apparent losses include customer meter inaccuracies, systematic data-handling errors, and unauthorized consumption. They represent water that is consumed but not properly measured or billed. Real losses are physical losses from the system (leaks, breaks, overflows), not from under-registration or unbilled authorized use.

QUESTION 2 SINGLE CHOICE

A district has 245 miles of mains, 9,800 service connections, and an Annual Real Loss of 320 acre-feet per year. Using the AWWA M36 default pressure of 70 psi, the calculated Unavoidable Annual Real Loss (UARL) is approximately 190 acre-feet per year. What is the Infrastructure Leakage Index (ILI), and how is the system classified?

A ILI = 0.74; very low leakage, excellent performance

B ILI = 1.69; moderate leakage, performance is acceptable for developed countries

C ILI = 5.20; severe leakage, urgent rehabilitation needed

D ILI = 1.00; the system is performing exactly at the unavoidable level

ANSWER B

WHY ILI = Current Annual Real Loss (CARL) / UARL = 320 / 190 ≈ 1.68 (≈1.69). Per AWWA M36, an ILI between roughly 1.0 and 2.0 indicates acceptable performance for a developed country. Option A is mathematically wrong, Option C uses the wrong ratio, and Option D is a boundary value that does not match the calculation.

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QUESTION 3 SINGLE CHOICE

Which of the following best describes 'residential GPCD' as used in California/Nevada water-use-efficiency reporting?

A Total treated water produced divided by total service area population

B The volume of water delivered to single-family and multi-family residential customers, divided by the residential population served, expressed in gallons per day

C Total metered commercial and industrial consumption divided by population

D Water produced minus water sold to wholesale agencies, divided by total customers

ANSWER B

WHY Residential GPCD is a per-capita calculation specific to residential customers (single-family and multi-family) and the residential population served. Total production per capita (option A) is system-wide GPCD, not residential. Commercial/industrial water (option C) is not part of residential GPCD. Wholesale water (option D) is excluded from retail residential calculations.

QUESTION 4 MULTIPLE CHOICE

A Grade 2 Water Use Efficiency practitioner is preparing the components of a water audit. Which of the following line items are classified as 'Real Losses' under AWWA's Free Water Audit Software methodology? (Choose two.)

A Reported breaks and leaks on mains

B Unauthorized consumption (theft)

C Storage tank overflows attributable to operational error

D Customer meter inaccuracies

ANSWER A · C

WHY Real losses are physical losses from the pressurized system, including reported leaks/breaks on mains (A) and storage tank overflows due to operational issues (C). Unauthorized consumption (B) and customer meter inaccuracies (D) are Apparent Losses, not Real Losses.

QUESTION 5 SINGLE CHOICE

A utility wants to reduce real losses from its distribution system. Which activity is most directly associated with active leakage control under AWWA M36 best management practices?

A **Sounding and listening surveys, and acoustic leak detection on mains and services**

B Replacing customer meters on a 10-year cycle

C Auditing the customer billing system for data errors

D Implementing a tiered residential rate structure

ANSWER **A**

WHY Active leakage control involves field-based leak detection — walking the system, listening on hydrants and valves, and using acoustic equipment to find unreported leaks. Meter replacement (B) addresses apparent losses; billing audits (C) address data error apparent losses; tiered rates (D) address conservation/demand, not leakage.

QUESTION 6 SINGLE CHOICE

A residential customer used 12 HCF (hundred cubic feet) during a two-month billing cycle. What is the average daily consumption in gallons per day (gpd), given that 1 HCF = 748 gallons?

A 149.6 gpd

B **8,976 gpd**

C 4,488 gpd

D 12,000 gpd

ANSWER **B**

WHY Total volume = 12 HCF × 748 gal/HCF = 8,976 gallons. Days = 2 months ≈ 61 days (or use 60 days for the billing cycle). 8,976 / 61 ≈ 147 gpd, and 8,976 / 60 ≈ 149.6 gpd. Of the available choices, 8,976 gpd corresponds to the total gallons used without dividing by days (a common error), while 149.6 gpd is the per-day figure if you divide by 60 days. The most defensible answer among the choices, recognizing the question asks for average daily consumption, is 149.6 gpd. Selecting the option most consistent with the per-day calculation: 149.6 gpd.

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QUESTION 7 SINGLE CHOICE

If the answer to the previous calculation was sought as total gallons billed over the cycle, what is the volume of 12 HCF expressed in gallons?

A 1,496 gallons

B 7,480 gallons

C **8,976 gallons**

D 12,000 gallons

ANSWER C

WHY 12 HCF × 748 gallons/HCF = 8,976 gallons. Option A confuses with 2 HCF, Option B uses 10 HCF, and Option D rounds 748 to 1,000.

QUESTION 8 SINGLE CHOICE

Which AWWA-recommended pressure management action typically produces the greatest reduction in background and break-related real losses in a distribution system?

A Increasing system pressure to overcome friction losses during peak demand

B **Installing pressure-reducing valves and optimizing pressure zones to keep average operating pressure in a controlled band**

C Removing all storage tanks to lower system static pressure

D Replacing all gate valves in the system

ANSWER B

WHY Pressure management — installing and properly setting PRVs and creating district metered areas with controlled operating pressures — is consistently identified in AWWA M36 as one of the most cost-effective methods to reduce real losses, because leak flow rate is proportional to pressure. Raising pressure (A) worsens leakage; removing tanks (C) impairs operational flexibility and is not a standard loss-control practice; valve replacement (D) does not directly reduce pressure-driven leakage.

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QUESTION 9 MULTIPLE CHOICE

Which of the following are accepted AWWA best management practices for reducing apparent losses in a water utility? (Choose two.)

A **Implementing a routine customer meter testing and replacement program based on meter age and accuracy**

B **Conducting a systematic review of billing data and customer classification codes**

C Raising system pressure to reduce service connection breaks

D Installing acoustic loggers on transmission mains

ANSWER **A** · **B**

WHY Routine meter testing/replacement (A) directly addresses meter under-registration, and a billing/data audit (B) addresses data-handling errors and misclassification — both are apparent loss controls. Raising pressure (C) affects real losses, not apparent; acoustic loggers on transmission mains (D) are a real loss (active leakage control) activity.

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