

Unit 11 - week 9

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Assignment 9

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-01, 23:59 IST.

1) Leaks occurring through pipe connections at the water meters is a component of: 1 point

- a) Real Loss
- b) Apparent loss
- c) Commercial loss
- d) All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
a.

2) Identify the correct pair: 1 point

- a) Water leakage in service connections – Physical Losses; Water loss from broken mains – Commercial Losses
- b) Erroneous flow accounting due to metering inaccuracy – Physical Losses; Losses due to pipe burst – Commercial Losses
- c) Leakage at connections, joints, valves, and fittings – Physical Losses; Overflow or leakage from storage – Commercial Losses
- d) Losses due to leakage in transmission and distribution mains – Physical Losses; Water theft and illegal connections – Commercial Losses

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
d.

3) Which of the following statements is correct about magnitude of Unaccounted for Water (UFW) and Non-Revenue Water (NRW): 1 point

- a) $NRW = UFW$
- b) $NRW \leq UFW$
- c) $NRW \geq UFW$
- d) NRW and UFW are independent of each other

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
c.

4) Which of these is not a component of Non-Revenue Water (NRW)? 1 point

- a) Unbilled Metered Consumption
- b) Billed Unmetered Consumption
- c) Overflow at utility's storage tanks
- d) Customer metering inaccuracies

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
b.

5) Infrastructure Leakage Index (ILI) depends on: 1 point

- a) Customer metering errors and Unauthorized Consumption
- b) Pipe length, average operating pressure and physical losses in the system
- c) Unregistered (illegal) connections and data handling errors
- d) All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
b.

6) Which of the following relations is correct? 1 point

- a) Non-Revenue Water = Water Losses + Total authorised Consumption – Billed authorised Consumption
- b) Non-Revenue Water = Total Water Pumped in System – Billed authorised Consumption
- c) Non-Revenue Water = Real Losses + Apparent Losses + Unbilled authorised Consumption
- d) All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
d.

7) Minimum Night Flow (MNF) Analysis for water loss estimation is carried out in the late-night to early morning, because, during this period 1 point

- a) Pressure is highest in the supply lines
- b) Water demand (legitimate flow) is lowest
- c) Flow can be regulated without disturbing consumers
- d) All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
b.

8) Acoustic methods for leak detection and localization in underground pipes, primarily relies on: 1 point

- a) Transmission of leak sound through pipe and network component
- b) Transmission of leak sound through ground (soil)
- c) Ability of sound sensing devices to detect leak noises
- d) All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
d.

9) Tracer gas injection in water pipelines is typically used for: 1 point

- a) Sealing very small leaks (cracks) using gas molecules in low pressure and non-metallic pipes
- b) Detecting small leaks especially in low pressure and non-metallic pipes
- c) Pressure management for leakage control in non-metallic pipes
- d) All of the above

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
b.

10) A bulk water meter at a residential complex inaccurately reads 0.92 kL for 1.0 kL of actual water flow through the meter. If monthly (30 days) reading in the meter reads as 6000 kL cumulative flow, the daily apparent losses (in kL/d) would be: 1 point

- a) 2.4 kL/d
- b) 12.7 kL/d
- c) 17.4 kL/d
- d) 48.6 kL/d

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
c.

11) Leak volume for a DMA was estimated as 221 L/s using minimum night flow analysis at 20 m average pressure. What would be leak flow in the DMA if the network operates at 12 m average pressure (Assume pressure-leakage exponent as 1.2 for the network). 1 point

- a) 120 L/s
- b) 145 L/s
- c) 340 L/s
- d) 408 L/s

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
a.

12) Acoustic sensor installed at left end hydrant of a 500 m pipe section records a sound peak 0.12 seconds after a sound peak recorded in the right end hydrant of the pipe. If the sound wave propagation velocity through pipe velocity in 2.5 km/s, the location of single leak in the pipe from left end would be: 1 point

- a) 150 m
- b) 250 m
- c) 350 m
- d) 400 m

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
d.

[Problem Statement for Q13-Q15]

Water Audit of a distribution network have resulted in the following estimations:
System Input Volume = 84 MLD
Billed Consumption = 46 MLD
Unbilled Authorized Consumption = 10 MLD
Estimated Physical Losses through the network = 21 MLD
Based on the above information, answer the following:

13) Total Apparent Losses (in %) for the distribution network would be: 1 point

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 7.5,9

14) Unaccounted for Water (in %) for the distribution network would be: 1 point

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 37,35

15) Non-Revenue Water (in %) for the distribution network would be: 1 point

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 42,48