

01	☐ A	☐ B	☐ C	☐ D	☒ E
02	☒ A	☐ B	☐ C	☐ D	☐ E
03	☒ A	☐ B	☐ C	☐ D	☐ E
04	☐ A	☐ B	☐ C	☒ D	☐ E
05	☐ A	☐ B	☒ C	☐ D	☐ E
06	☒ A	☐ B	☐ C	☐ D	☐ E
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14	☐ A	☐ B	☒ C	☐ D	☐ E
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27	☐ A	☐ B	☐ C	☒ D	☐ E
28	☐ A	☐ B	☒ C	☐ D	☐ E
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30	☐ A	☐ B	☒ C	☐ D	☐ E
31	☐ A	☐ B	☐ C	☐ D	☒ E
32	☐ A	☒ B	☐ C	☐ D	☐ E
33	☐ A	☒ B	☐ C	☐ D	☐ E
34	☒ A	☐ B	☐ C	☐ D	☐ E
35	☒ A	☐ B	☐ C	☐ D	☐ E
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

Arkansas Drinking Water Program

YTLQW5F

Arkansas Water Treatment Grade 2

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Arkansas Drinking Water Program YTLQVV5F , 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, YTLQVV5F
- the question number
- the email address on your order

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

QUESTION 1 SINGLE CHOICE

A surface water source has high turbidity following a rain event. Which operational impact should a Grade 2 operator expect first?

- ☐ A Decreased chlorine demand and improved finished water clarity
- ☒ B Increased coagulant demand and shortened filter run times
- ☐ C Elimination of the need for pH adjustment in coagulation
- ☐ D Reduced loading on the sedimentation basins

ANSWER B

WHY Stormwater runoff carries silt, organics, and other particulates into surface water, raising turbidity. Higher turbidity requires more coagulant to form settleable floc and clogs filter media faster, shortening filter run times. The other options describe effects opposite to what high turbidity actually causes.

QUESTION 2 SINGLE CHOICE

During jar testing, which observation most clearly indicates that the selected coagulant dose is appropriate for the source water?

- ☐ A Floc forms slowly, remains small, and resuspends easily
- ☒ B Floc forms quickly, settles well, and leaves a clear supernatant
- ☐ C The water turns bright blue after coagulant addition
- ☐ D No floc forms at all regardless of mixing intensity

ANSWER B

WHY A proper jar test result shows visible floc that forms within a reasonable time under proper mixing, settles out well in the settling phase, and produces a clear supernatant indicating effective turbidity and color removal. The other options describe signs of under-dose, mis-dose, or no coagulation response.

QUESTION 3

MULTIPLE CHOICE

A conventional filter bed shows a steady rise in effluent turbidity, shortened filter runs, and mudball formation. Which operational actions are appropriate responses? (Choose two.)

- ☒ **A** Increase the backwash flow rate and adjust backwash duration to expand the media properly
- ☐ **B** Reduce surface wash or air-scour frequency to minimize media disturbance
- ☒ **C** Inspect the filter for mudballs and consider surface washing or chemical cleaning
- ☐ **D** Switch to a higher service flow rate to push contaminants through faster

ANSWER A • C

WHY Mudballs and shortened runs typically point to inadequate backwash and surface maintenance. Properly expanded-media backwash (A) and attention to surface cleaning, including mudball removal (C), are correct responses. Reducing surface wash maintenance (B) makes the problem worse, and increasing service flow (D) worsens filtration performance and can damage the bed.

QUESTION 4

SINGLE CHOICE

A water system uses free chlorine for primary disinfection. As pH increases within the typical operating range, what happens to the ratio of hypochlorous acid (HOCl) to hypochlorite ion (OCl^-)?

- ☐ **A** The HOCl fraction increases significantly
- ☒ **B** The HOCl fraction decreases as more chlorine shifts to OCl^-
- ☐ **C** Both fractions remain equal at all pH values
- ☐ **D** Only OCl^- exists above pH 6.0

ANSWER B

WHY Free chlorine speciation is pH dependent. As pH rises, the equilibrium shifts toward the hypochlorite ion (OCl^-) and away from hypochlorous acid (HOCl). Because HOCl is the much stronger disinfectant, higher pH reduces disinfection effectiveness at a given chlorine dose. Options A and D contradict this chemistry, and C is incorrect because they are equal only near the pKa (~7.5).

QUESTION 5

SINGLE CHOICE

Why is combined chlorine (chloramine) typically a less effective disinfectant than free chlorine (HOCl/OCl^-) at equivalent concentrations?

- ☐ A Combined chlorine does not oxidize microorganisms at all
- ☒ B Combined chlorine has a much lower oxidation potential and reacts more slowly with pathogens
- ☐ C Combined chlorine evaporates from the water within minutes
- ☐ D Combined chlorine only forms at temperatures above 80°F

ANSWER B

WHY Combined chlorine species (such as monochloramine) are weaker oxidants than free chlorine and kill microorganisms much more slowly. That is why chloramination requires longer contact time and higher CT values to achieve the same log inactivation. Option A is false (it does oxidize, just slowly), C confuses it with gaseous Cl_2 , and D is not a true chemistry requirement.

QUESTION 6

SINGLE CHOICE

When performing a free chlorine residual test with a DPD (N,N-diethyl-p-phenylenediamine) test kit, what is the purpose of adding the DPD reagent to the sample?

- ☐ A It buffers the sample to a pH of 9.0 before titration
- ☒ B It reacts with chlorine to form a pink/red color proportional to chlorine concentration
- ☐ C It precipitates iron and manganese so they do not interfere
- ☐ D It converts combined chlorine into free chlorine

ANSWER B

WHY DPD is a colorimetric reagent that reacts with free chlorine (and separately with combined chlorine when a different step is used) to produce a pink-to-red color whose intensity is proportional to the chlorine residual concentration. Option A misstates the chemistry, C confuses it with other reagents, and D describes a separate analytical step, not DPD itself.

QUESTION 7

SINGLE CHOICE

Before reporting a finished-water turbidity result, an operator should verify which of the following?

- ☐ A The sample was taken from the raw water tap rather than the finished water tap
- ☒ B The bench turbidimeter was calibrated with primary standards within its calibration interval and the sample vial is clean and free of scratches
- ☐ C The sample temperature was brought to boiling before reading
- ☐ D The chlorine residual was measured at the same time using the same vial

ANSWER B

WHY Accurate turbidity measurement requires a properly calibrated instrument (using primary standards such as StablCal or formazin on its documented schedule) and a clean, scratch-free sample vial — fingerprints, deposits, and scratches scatter light and produce falsely high readings. Sampling from the raw water tap (A) is the wrong sample location, heating to boiling (C) is not part of the procedure, and chlorine does not need to share the vial (D).

QUESTION 8

MULTIPLE CHOICE

Under the federal Lead and Copper Rule Revisions (LCRR), water systems must develop and maintain an inventory of lead service lines (LSLs). Which of the following statements about service line inventory requirements are correct? (Choose two.)

- ☒ A The inventory must categorize every service line as lead, galvanized requiring replacement, lead status unknown, or non-lead
- ☐ B Only service lines that are clearly lead must be included; unknown lines may be omitted
- ☒ C The initial LSL inventory was required to be submitted to the state by an October 2024 deadline
- ☐ D Records are exempt from public access and do not need to be made available to consumers

ANSWER A • C

WHY Under LCRR, systems must develop a full service line inventory categorizing each line (lead, galvanized-requiring-replacement, unknown, or non-lead) — option A — and the initial inventory was due to primacy agencies by October 16, 2024 — option C. Unknown lines cannot simply be omitted (B is wrong), and inventories must be publicly accessible and made available to consumers (D is wrong).

QUESTION 9

SINGLE CHOICE

A pressure drop is observed on a distribution main that crosses a stream. What is the most likely operational concern for a Grade 2 operator?

- ☒ **A** A possible leak or main break creating a potential pathway for contaminant intrusion
- ☐ **B** An automatic reduction in customer chlorine residual
- ☐ **C** An increase in raw-water reservoir temperature
- ☐ **D** An immediate increase in finished-water pH at the plant

ANSWER A

WHY An unexplained pressure drop on a main, especially one near a stream crossing, strongly suggests a leak or break. Because negative or reduced pressure can draw contaminated water into the pipe (a pathway for intrusion), this is both a water loss and a public health concern requiring prompt isolation and repair. Options B, C, and D describe effects that do not directly follow from a pressure drop on a distribution main.