NORTH CAROLINA C-WELL EXAM 2 PRACTICE TEST (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Table of Contents

Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. How does a gravel pack function in well construction?

A. It filters water to remove sand after pumping.

B. It stabilizes the formation around the screen, reduces sand and silt production, and prolongs screen life.

C. It seals the top of the borehole.

D. It cures cement around the borehole.

2. Before entering a confined space, which hazards should be mitigated?

A. Oxygen deficiency and hazardous gases

B. Weather exposure and sunlight

C. Tool ownership and maintenance

D. Electrical grounding

3. Which statement describes the correct method for using calcium hypochlorite for disinfection?

A. dissolved in water as a dry chemical then injected into the water system

B. dissolved in water, allow to settle, and the supernatant siphoned off and fed into the water system

C. fed as a dry chemical directly into the pipeline

D. fed as dry powder into the clear well

4. How does chlorination affect distribution system safety and corrosion control?

A. Increases residual disinfection without any other considerations

B. Provides residual disinfection in the system; pH and corrosion control measures may be needed to prevent corrosion

C. Causes immediate corrosion in all pipes

D. Decreases disinfection over time

5. The continuous exchange of water between the earth and the atmosphere is called what?

A. Reverse osmosis

B. Evapotranspiration

C. Hydrologic cycle

D. Cycle of infiltration

6. The longest a 2 in. water main can run is how many feet?

A. 1,200 ft

B. 1,000 ft

C. 900 ft

D. 1,100 ft

7. Which description best defines chlorine demand?

A. The difference between the amount of chlorine added and the residual chlorine remaining after a given contact time

B. The difference between the total chlorine residual and the free chlorine residual

C. The difference between the chlorine added and turbidity

D. The difference between the chlorine added and the pH

8. What media is used in the confirmed test for total coliform bacteria?

A. BGB

B. LTB

C. nutrient agar

D. none of the above

9. Which component helps prevent backflow after the pump stops?

A. Casing and screen

B. Check valve

C. Pressure switch

D. Discharge piping

10. Which process describes water movement from the surface into the soil, replenishing groundwater?

A. Infiltration

B. Runoff

C. Evaporation

D. Transpiration

Answers

1. B
2. A
3. B
4. B
5. C
6. B
7. A
8. A
9. B
10. A

Explanations

1. How does a gravel pack function in well construction?

A. It filters water to remove sand after pumping.

B. It stabilizes the formation around the screen, reduces sand and silt production, and prolongs screen life.

C. It seals the top of the borehole.

D. It cures cement around the borehole.

A gravel pack around a well screen serves as a sand-control barrier that protects the screen and the pumping system. By placing properly graded gravel in the annulus between the screen and the formation, formation sand and fines are filtered before they can enter the screen. This stabilization of the surrounding formation reduces the amount of sand and silt that would otherwise be produced with the water and helps prevent erosion around the screen. The result is a longer-lasting screen with fewer plugging and wear issues, since the gravel pack provides a permeable, protective filter bed that allows fluid to flow while keeping sand out. The other options misstate the function: sealing the top of the borehole or curing cement around it are cementing tasks, not gravel-pack purposes, and the gravel pack isn't primarily there to filter water after pumping.

2. Before entering a confined space, which hazards should be mitigated?

A. Oxygen deficiency and hazardous gases

B. Weather exposure and sunlight

C. Tool ownership and maintenance

D. Electrical grounding

In a confined space, the most critical factor is the air inside. Oxygen deficiency can cause fainting and death, and the presence of hazardous gases (toxic or flammable) creates immediate health and explosion risks. Because these atmospheric hazards can develop or linger inside a confined space, they must be tested and controlled before entry—ventilating to restore safe oxygen levels and remove or dilute dangerous gases, or applying other approved controls. Only when the atmosphere is confirmed safe should entry proceed with proper permits and rescue readiness. Other issues like weather exposure, sunlight, tool ownership and maintenance, or electrical grounding matter in safety planning, but they do not determine whether it's safe to breathe inside the space. The air quality is the primary concern to mitigate first.

3. Which statement describes the correct method for using calcium hypochlorite for disinfection?

A. dissolved in water as a dry chemical then injected into the water system

B. dissolved in water, allow to settle, and the supernatant siphoned off and fed into the water system

C. fed as a dry chemical directly into the pipeline

D. fed as dry powder into the clear well

Calcium hypochlorite works best for disinfection when it's used as a chlorine solution rather than a dry solid. Dissolve the calcium hypochlorite in water, allow any insoluble material to settle, and feed only the clear supernatant into the water system. This creates a known, controllable chlorine concentration and ensures the solution mixes evenly with the water, giving reliable disinfection. Feeding the clear liquid avoids introducing undissolved solids that can clog dosing equipment, cause wear, or create uneven dosing. Passing dry chemical directly into a pipeline or treating a dry powder in the clear well can introduce dust hazards, clogging, and unpredictable chlorine delivery because not all of the chemical dissolves before it contacts the water, leading to under- or over-chlorination.

4. How does chlorination affect distribution system safety and corrosion control?

A. Increases residual disinfection without any other considerations

B. Provides residual disinfection in the system; pH and corrosion control measures may be needed to prevent corrosion

C. Causes immediate corrosion in all pipes

D. Decreases disinfection over time

Chlorination keeps a disinfectant residual in the distribution system, which is crucial for preventing microbial growth as water moves toward consumers and ensuring safety beyond the treatment plant. At the same time, the chemistry of chlorine interactions with pipe materials means you can't rely on disinfection alone—pH and corrosion control measures may be needed to prevent metal from corroding into the water. Maintaining an appropriate pH helps minimize corrosion of pipes and reduces the release of metals, while corrosion inhibitors and alkalinity management support a protective environment for the plumbing. So the best approach combines a stable disinfection residual with chemistry control to limit corrosion and protect both water quality and the distribution system.

5. The continuous exchange of water between the earth and the atmosphere is called what?

A. Reverse osmosis

B. Evapotranspiration

C. Hydrologic cycle

D. Cycle of infiltration

The continuous exchange of water between the earth and the atmosphere is described by the hydrologic cycle. This cycle encompasses every step that moves and stores water: evaporation from oceans and other bodies, transpiration and evaporation from land surfaces (together called evapotranspiration), condensation into clouds, precipitation back to the surface, and processes like infiltration into soil and groundwater, as well as runoff and storage in lakes and rivers. Evapotranspiration is a part of the cycle, not the whole thing, and infiltration is one specific step within the cycle. Reverse osmosis is a laboratory or engineering process for separating water from salts, not the natural cycle. So the term that names the entire, interconnected system is the hydrologic cycle.

6. The longest a 2 in. water main can run is how many feet?

A. 1,200 ft

B. 1,000 ft

C. 900 ft

D. 1,100 ft

In water distribution, the distance a main can run is limited by pressure losses that accumulate as water flows through the pipe. A smaller diameter pipe like a 2-inch main has higher friction loss per foot, so to keep the far end above the minimum required pressure, designers cap the run length. For a 2-inch main, that maximum practical run is about 1,000 feet. So the longest distance that can be reliably served is 1,000 feet. Going longer would likely drop pressure too low, and longer runs would require using a larger pipe or adding pumping/boosting or looping to maintain adequate pressure. The other options either exceed this typical limit or fall short of the maximum allowable length.

7. Which description best defines chlorine demand?

A. The difference between the amount of chlorine added and the residual chlorine remaining after a given contact time

B. The difference between the total chlorine residual and the free chlorine residual

C. The difference between the chlorine added and turbidity

D. The difference between the chlorine added and the pH

Chlorine demand is the amount of chlorine that is consumed by reactions with substances in the water during disinfection. When chlorine is added, some of it reacts with organic matter, ammonia, iron, manganese, and other constituents, so less remains as active disinfectant. After a specified contact time, you measure the chlorine that's left as the residual. The difference between what you added and what's left as residual is the chlorine demand—the portion of the dose that was used up by those reactions before any disinfection effect can occur. The other ideas don't define chlorine demand. The difference between total chlorine residual and free chlorine residual relates to combined chlorine, not to the amount consumed from the dose. Differences involving turbidity or pH don't describe the amount consumed from the dose; turbidity and pH influence how chlorine behaves, but they aren't about the amount taken up by reactions during dosing.

8. What media is used in the confirmed test for total coliform bacteria?

A. BGB

B. LTB

C. nutrient agar

D. none of the above

For confirming total coliforms, a selective, differential solid medium is used to verify lactose fermentation by coliforms while inhibiting others. The standard confirmed test employs Brilliant Green Bile (BGB) agar. This medium contains bile salts and a brilliant green dye that suppress many non-coliform bacteria and make lactose-fermenting coliforms stand out. Coliforms that ferment lactose produce visible growth with gas production on this medium, confirming their presence. In contrast, Lauryl Tryptose Broth is used in the presumptive stage to detect gas in liquid medium, nutrient agar is non-selective and doesn't differentiate coliforms, and "none of the above" isn't correct since BGB is the medium used.

9. Which component helps prevent backflow after the pump stops?

A. Casing and screen

B. Check valve

C. Pressure switch

D. Discharge piping

A one-way device in the line, called a check valve, is used to stop water from flowing backward once the pump stops. While the pump is running, pressure from the pumped water keeps this valve open so water can move in the forward direction. When the pump stops, there's no forward pressure, and gravity or downstream pressure seals the valve shut, preventing any reverse flow back toward the pump or source. Casing and screen protect the pump intake from debris, but don't stop backflow. A pressure switch controls when the pump turns on or off based on system pressure, not the direction of flow. Discharge piping provides the path for water, but it doesn't inherently stop reverse flow on its own.

10. Which process describes water movement from the surface into the soil, replenishing groundwater?

A. Infiltration

B. Runoff

C. Evaporation

D. Transpiration

Water moving from the surface into the soil and downward to help refill groundwater is infiltration. It describes how surface water enters the soil's pore spaces and percolates downward toward the water table, gradually becoming groundwater. This process is how the hydrologic cycle restores aquifers after rainfall or meltwater. In contrast, runoff is water that travels over the land surface without soaking in, evaporation is the transformation of liquid water into vapor at the surface, and transpiration is water lost by plants. Infiltration rates vary with soil properties: permeable soils allow more infiltration, while impermeable surfaces slow it down.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://northcarolinacwell2.examzify.com

We wish you the very best on your exam journey. You've got this!