

STUDY GUIDE



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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

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1. Which term describes a stone in the ureter?

- A. Ureterolith
- B. Nephrolithiasis
- C. Cystolith
- D. Ureterolithiasis

2. Acidic urine favors which types of stones?

- A. Uric acid stones
- B. Calcium phosphate and struvite stones
- C. Uric acid and cystine stones
- D. Calcium oxalate stones

3. What is the typical presenting symptom of bladder cancer?

- A. Painless hematuria
- B. Severe flank pain
- C. Jaundice
- D. No urinary symptoms

4. Which dipstick parameter is used to detect leukocyte esterase in urine?

- A. Nitrite
- B. Glucose
- C. Leukocyte esterase
- D. Protein

5. What laboratory finding is commonly seen after an infection in acute post-streptococcal glomerulonephritis?

- A. Decreased Complement C3 Levels With Nephritic-Range Proteinuria and Hematuria
- B. Elevated Complement C3 Levels With Proteinuria
- C. Decreased C4 With Nephrotic-Range Proteinuria
- D. Normal Complement With Microscopic Hematuria

- 6. Which finding is most characteristic of acute glomerulonephritis on urinalysis?**
- A. Red blood cell casts
 - B. White blood cell casts
 - C. Glucosuria
 - D. Protein crystal formation
- 7. Functional incontinence is primarily due to what factor?**
- A. Cognitive impairment or mobility impairment preventing timely toileting
 - B. Detrusor overactivity
 - C. Urethral sphincter weakness
 - D. Outflow obstruction
- 8. Which term refers to abnormally low concentrations of protein in the blood?**
- A. Hyperproteinuria
 - B. Hypoproteinemia
 - C. Hydronephrosis
 - D. Nephritis
- 9. Which statement accurately describes the use of FENa in differentiating prerenal from intrinsic AKI, considering diuretic effects?**
- A. FENa is always accurate and not affected by diuretics
 - B. FEUA may be used when diuretics interfere
 - C. FENa <10% confirms prerenal AKI
 - D. FENa <1% suggests prerenal; >2% suggests ATN; diuretics can confound; FEUA may be used when diuretics interfere
- 10. Which term describes a kidney stone that is also called a renal calculus?**
- A. Nephrolith
 - B. Stone
 - C. Nephrolithiasis
 - D. Cystolith

Answers

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

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Explanations

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1. Which term describes a stone in the ureter?

- A. Ureterolith**
- B. Nephrolithiasis
- C. Cystolith
- D. Ureterolithiasis

In urinary stone terminology, the location determines the name, with lith referring to a stone. A stone located in the ureter is called a ureterolith. This directly identifies the object and its exact location. The other terms describe different things: nephrolithiasis refers to kidney stones or the condition of having them, cystolith is a stone in the bladder, and ureterolithiasis would describe stones in the ureter as a disease state rather than the stone itself. So the term that names the stone itself in the ureter is ureterolith.

2. Acidic urine favors which types of stones?

- A. Uric acid stones
- B. Calcium phosphate and struvite stones
- C. Uric acid and cystine stones**
- D. Calcium oxalate stones

When urine is acidic, the solubility of certain stone-forming substances decreases, making crystal formation more likely. Uric acid is less soluble in low pH urine, so uric acid stones form more readily in acidic conditions. Cystine also has very low solubility in acidic urine, and stones from this amino acid tend to appear when the urine is acidic. In contrast, calcium phosphate and struvite stones prefer alkaline urine, and calcium oxalate stones can form over a wide pH range and are not specifically tied to acidity. Therefore, acidic urine favors uric acid stones and cystine stones.

3. What is the typical presenting symptom of bladder cancer?

- A. Painless hematuria**
- B. Severe flank pain
- C. Jaundice
- D. No urinary symptoms

Painless hematuria occurs because bladder tumors irritate and bleed from the bladder lining as they grow, releasing blood into the urine without causing pain. This makes painless visible bleeding (or microscopic blood on urinalysis) the classic presenting sign of bladder cancer. Severe flank pain would suggest obstruction or another issue like a kidney stone or pyelonephritis, not the typical early presentation of bladder cancer. Jaundice points to liver or biliary problems, which are not related to bladder tumors. While some patients may have urinary symptoms such as frequency or dysuria, the hallmark clue that most strongly points to bladder cancer is painless hematuria.

4. Which dipstick parameter is used to detect leukocyte esterase in urine?

- A. Nitrite
- B. Glucose
- C. Leukocyte esterase**
- D. Protein

Leukocyte esterase on a urine dipstick is the test that detects this enzyme released by neutrophils in the presence of inflammation or infection in the urinary tract. When white blood cells are present in the urine (pyuria), they release leukocyte esterase, and the dipstick reaction is positive. This makes it a direct marker for leukocytes in urine, i.e., a sign of possible a urinary tract infection. The other dipstick parameters measure different things—nitrite indicates bacterial conversion of nitrates, glucose shows glycosuria, and protein reflects proteinuria—so they do not specifically detect leukocyte esterase.

5. What laboratory finding is commonly seen after an infection in acute post-streptococcal glomerulonephritis?

- A. Decreased Complement C3 Levels With Nephritic-Range Proteinuria and Hematuria**
- B. Elevated Complement C3 Levels With Proteinuria
- C. Decreased C4 With Nephrotic-Range Proteinuria
- D. Normal Complement With Microscopic Hematuria

After a streptococcal infection, acute post-streptococcal glomerulonephritis is driven by immune complex-mediated injury in the glomeruli. Those immune complexes activate the complement system and consume C3, so the typical lab finding is a low C3 level. C4 is usually normal in this setting. Clinically this matches a nephritic picture: hematuria (often with red cell casts), and nephritic-range proteinuria, along with possible hypertension and mild oliguria. The C3 level tends to rebound to normal as the illness resolves over weeks. Therefore, the best answer is a decreased C3 level with nephritic-range proteinuria and hematuria.

6. Which finding is most characteristic of acute glomerulonephritis on urinalysis?

- A. Red blood cell casts**
- B. White blood cell casts
- C. Glucosuria
- D. Protein crystal formation

The key concept is that glomerular inflammation allows red blood cells to leak into the filtrate, and as they flow through tubules they become trapped in a protein matrix to form red blood cell casts. This combination—hematuria with RBC casts in the urine—is the most characteristic sign of acute glomerulonephritis on urinalysis because it directly reflects a glomerular source of bleeding. White blood cell casts point more toward tubulointerstitial inflammation or infection rather than primary glomerular bleeding. Glucosuria implies proximal tubule dysfunction or diabetes mellitus, not a glomerular lesion. Protein crystals are not a typical feature of acute glomerulonephritis; while some proteinuria can occur, the hallmark finding is the presence of RBC casts.

7. Functional incontinence is primarily due to what factor?

- A. Cognitive impairment or mobility impairment preventing timely toileting
- B. Detrusor overactivity
- C. Urethral sphincter weakness
- D. Outflow obstruction

Functional incontinence happens when the bladder and its nerves work normally, but the person can't get to or reach the toilet in time because of cognitive problems or physical limitations. Things like dementia, delirium, or limited mobility (arthritis, weakness, being wheelchair-bound) or environmental barriers prevent timely toileting, so leakage occurs despite normal bladder storage and emptying. This is different from detrusor overactivity, where the bladder itself contracts involuntarily and creates urgency and leakage. It's also different from urethral sphincter weakness, which causes leakage with physical strain (stress incontinence). And it's not due to an obstruction blocking urine flow, which leads to voiding difficulties and different patterns of leakage.

8. Which term refers to abnormally low concentrations of protein in the blood?

- A. Hyperproteinuria
- B. Hypoproteinemia
- C. Hydronephrosis
- D. Nephritis

The concept here is naming a condition characterized by too little protein in the blood. Hypoproteinemia means a lower-than-normal level of plasma protein, especially albumin. This can arise from poor nutrition, liver disease that reduces protein synthesis, or loss of protein through the kidneys or gut. When blood protein drops, the oncotic pressure that keeps fluid in the vessels falls, which can lead to edema. The other terms don't describe low blood protein: hyperproteinuria refers to excess protein in the urine, not in the blood; hydronephrosis is dilation of the kidney due to obstruction; nephritis is kidney inflammation. So the best term for abnormally low concentrations of protein in the blood is hypoproteinemia.

9. Which statement accurately describes the use of FENa in differentiating prerenal from intrinsic AKI, considering diuretic effects?

- A. FENa is always accurate and not affected by diuretics
- B. FEUA may be used when diuretics interfere
- C. FENa <10% confirms prerenal AKI
- D. FENa <1% suggests prerenal; >2% suggests ATN; diuretics can confound; FEUA may be used when diuretics interfere

The key idea is how the kidney handles sodium under different injury patterns and how that changes what FENa can tell us. In prerenal AKI, the kidneys conserve sodium to maintain volume, so there is very little sodium lost in urine and the fractional excretion of sodium tends to be very low (usually under about 1%). In intrinsic AKI like ATN, tubular damage impairs sodium reabsorption, so more sodium spills into the urine and FENa tends to rise (often above 2%). But diuretics muddy this picture. Diuretics block sodium reabsorption, especially in the loop of Henle, which pushes FENa up even when the injury is prerenal. That makes FENa unreliable in patients who are actively taking diuretics. To work around this, clinicians turn to a different measure that is less affected by diuretics: the fractional excretion of urea (FEUrea, sometimes referred to as FEUA in shorthand). FEUrea remains more helpful because diuretics don't alter urea handling in the same way, so a low FEUrea supports prerenal causes and a higher FEUrea supports intrinsic injury. So the statement aligns with the reality that while FENa thresholds (low for prerenal, high for ATN) are useful, diuretics can confound them, and FEUrea can be used as an alternative when diuretics interfere.

10. Which term describes a kidney stone that is also called a renal calculus?

A. Nephrolith

B. Stone

C. Nephrolithiasis

D. Cystolith

A kidney stone is described with the term nephrolith. The prefix nephro- means kidney and lith means stone, so nephrolith refers to a single stone located in the kidney. Nephrolithiasis, on the other hand, denotes the condition of having kidney stones in general, focusing on the disease state rather than a single stone. A plain "stone" is vague and could refer to stones anywhere in the urinary tract, and a cystolith is a stone within a cyst or in the bladder, not in the kidney. So the most precise term for a kidney stone is nephrolith.

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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://urinarysyspathologies.examzify.com>

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

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