

NMNC 4510 Concept Synthesis Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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 process is a function of the kidney hormones? (Renin-angiotensin system)**
 - A. Prostaglandin increases blood flow and vascular permeability.**
 - B. Bradykinin regulates intrarenal blood flow via vasodilation or vasoconstriction.**
 - C. Renin raises blood pressure because of angiotensin and aldosterone secretion.**
 - D. Erythropoietin promotes calcium absorption in the gastrointestinal tract.**

- 2. Which hormone influences kidney function?**
 - A. Renin**
 - B. Bradykinin**
 - C. Aldosterone**
 - D. Erythropoietin**

- 3. Which initial change in acid-base balance will the nurse expect in the progressive stage of shock?**
 - A. Metabolic acidosis**
 - B. Metabolic alkalosis**
 - C. Respiratory acidosis**
 - D. Respiratory alkalosis**

- 4. Which type of shock would you monitor for in a patient with a ruptured abdominal aortic aneurysm?**
 - A. Hypovolemic**
 - B. Obstructive**
 - C. Cardiogenic**
 - D. Neurogenic**

- 5. The nurse reviews the kidney function blood studies of four clients. Which client's results indicate kidney impairment?**
 - A. Client 1: Serum Creatinine 0.1 mg/dL; BUN 16 mg/dL**
 - B. Client 2: Serum Creatinine 0.8 mg/dL; BUN 18 mg/dL**
 - C. Client 3: Serum Creatinine 1.2 mg/dL; BUN 20 mg/dL**
 - D. Client 4: Serum Creatinine 1.9; BUN 22 mg/dL**

- 6. A client admitted with oliguria receives a prescription for 900 mL of oral fluids over 24 hours. Which interpretation is most accurate?**
- A. It will compensate for both insensible and expected output over the next 24 hours.**
 - B. It equals the expected urinary output for the next 24 hours.**
 - C. It will prevent the development of pneumonia and a high fever.**
 - D. It will reduce hyperkalemia, which can lead to life-threatening cardiac dysrhythmias.**
- 7. Which symptom is most likely to improve with carbidopa-levodopa therapy in Parkinson disease?**
- A. Tremor**
 - B. Paresthesias**
 - C. Hyperglycemia**
 - D. Headache**
- 8. Which question is most relevant to assess risk for mitral valve stenosis?**
- A. Do you frequently get urinary tract infections?**
 - B. Have you had a recent episode of pneumonia?**
 - C. Did you ever have strep throat during childhood?**
 - D. Do you have a family history of heart attack or angina?**
- 9. A client with partial-thickness burns on the chest, abdomen, and right side arrives in the emergency department. What action should the nurse take first?**
- A. Remove the client's clothing**
 - B. Evaluate whether the client has inhaled smoke**
 - C. Insert a venous access device in an unaffected arm**
 - D. Determine the extent of the burns, using the rule of nines**

10. Which finding is commonly observed in acute spinal shock?

- A. Hypertension**
- B. Bradycardia**
- C. Spastic paralysis**
- D. Urinary retention**

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Answers

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

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Explanations

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1. Which process is a function of the kidney hormones?
(Renin-angiotensin system)
- A. Prostaglandin increases blood flow and vascular permeability.
 - B. Bradykinin regulates intrarenal blood flow via vasodilation or vasoconstriction.
 - C. Renin raises blood pressure because of angiotensin and aldosterone secretion.**
 - D. Erythropoietin promotes calcium absorption in the gastrointestinal tract.

The key idea here is how kidney hormones regulate blood pressure through the renin-angiotensin system. When the kidneys sense low blood pressure or low sodium delivery, they release renin. Renin starts a cascade: it converts angiotensinogen to angiotensin I, which is turned into angiotensin II. Angiotensin II is a strong vasoconstrictor and also stimulates aldosterone release from the adrenal cortex. Aldosterone promotes sodium (and water) reabsorption in the distal nephron, increasing blood volume and pressure. So renin raises blood pressure by kickstarting angiotensin II and aldosterone actions, which is exactly what the statement conveys. Other listed substances play different roles (prostaglandins modulate renal blood flow, bradykinin affects intrarenal flow but isn't the main hormonal driver of this BP pathway, and erythropoietin mainly stimulates red blood cell production rather than calcium absorption in the gut).

2. Which hormone influences kidney function?
- A. Renin
 - B. Bradykinin
 - C. Aldosterone**
 - D. Erythropoietin

Aldosterone directly regulates how the kidney handles salts and water. This adrenal cortical hormone acts on cells in the distal tubule and collecting duct to increase the activity and number of sodium channels (ENaC) and the Na⁺/K⁺ ATPase pump. The result is more sodium reabsorption from the filtrate into the blood, and water follows, raising blood volume and pressure. Potassium is pushed into the filtrate to be excreted, maintaining electrolyte balance, and hydrogen ion secretion helps with acid-base balance as well. Renin is an enzyme that initiates the RAAS cascade, indirectly affecting kidney function but not a hormone itself. Bradykinin influences renal blood flow as a vasodilator but is not a primary regulator of tubular transport. Erythropoietin is produced by the kidneys to stimulate red blood cell production, not to control tubular reabsorption or fluid balance.

3. Which initial change in acid-base balance will the nurse expect in the progressive stage of shock?

- A. Metabolic acidosis**
- B. Metabolic alkalosis**
- C. Respiratory acidosis**
- D. Respiratory alkalosis**

When tissue perfusion drops during the progressive stage of shock, cells switch to anaerobic metabolism and produce lactic acid. This lactic acid accumulation lowers the blood pH and consumes bicarbonate, leading to metabolic acidosis. That shift is the earliest acid-base change you'd expect as shock worsens. The body may try to compensate by increasing ventilation to blow off CO₂, which can blunt the acidosis somewhat, but the primary disturbance remains metabolic acidosis. Choices involving alkalosis (metabolic or respiratory) would reflect loss of acid or excessive CO₂ loss not driven by tissue hypoxia, while respiratory acidosis would come from CO₂ retention due to respiratory failure, not the initial acid-base change caused by poor perfusion.

4. Which type of shock would you monitor for in a patient with a ruptured abdominal aortic aneurysm?

- A. Hypovolemic**
- B. Obstructive**
- C. Cardiogenic**
- D. Neurogenic**

When a ruptured abdominal aortic aneurysm occurs, internal bleeding rapidly reduces the amount of blood circulating in the vessels. This loss of intravascular volume lowers venous return to the heart (preload), which drops cardiac output and tissue perfusion—classic hypovolemic shock. The body's quick responses—tachycardia and vasoconstriction—aim to maintain perfusion, but ongoing bleeding worsens shock. So the scenario is best monitored as hypovolemic shock, with priorities on rapid control of the bleeding and careful volume resuscitation to support perfusion without exacerbating hemorrhage. The other shock types involve different mechanisms (obstruction to flow, pump failure, or loss of sympathetic tone) and aren't the primary issues in a ruptured AAA.

5. The nurse reviews the kidney function blood studies of four clients. Which client's results indicate kidney impairment?
- A. Client 1: Serum Creatinine 0.1 mg/dL; BUN 16 mg/dL
 - B. Client 2: Serum Creatinine 0.8 mg/dL; BUN 18 mg/dL
 - C. Client 3: Serum Creatinine 1.2 mg/dL; BUN 20 mg/dL
 - D. Client 4: Serum Creatinine 1.9; BUN 22 mg/dL**

Elevated serum creatinine is the clearest sign of reduced kidney filtration. Creatinine is produced at a nearly constant rate and is normally cleared by the kidneys; when glomerular filtration drops, creatinine accumulates in the blood. BUN can rise for several non-kidney reasons (dehydration, high protein intake, catabolic states), so it's a less specific marker. In these values, the first three clients have creatinine levels within or near the normal range, while the fourth client has a markedly elevated creatinine of 1.9 mg/dL with a modestly increased BUN of 22 mg/dL. This pattern points to impaired kidney function, since the high creatinine directly reflects reduced filtration rather than a transitory or non-renal factor.

6. A client admitted with oliguria receives a prescription for 900 mL of oral fluids over 24 hours. Which interpretation is most accurate?
- A. It will compensate for both insensible and expected output over the next 24 hours.
 - B. It equals the expected urinary output for the next 24 hours.
 - C. It will prevent the development of pneumonia and a high fever.**
 - D. It will reduce hyperkalemia, which can lead to life-threatening cardiac dysrhythmias.

Adequate hydration supports airway defenses. Providing 900 mL of oral fluids in 24 hours helps keep mucous membranes moist and maintains mucociliary clearance, which lowers the risk that dehydration will lead to thick, difficult-to-clear secretions and potential respiratory infections like pneumonia. If pneumonia develops, fever can accompany it, so maintaining hydration through this oral fluid prescription helps reduce that risk. This interpretation focuses on preventing dehydration-related complications rather than precisely balancing insensible losses or matching a predicted urine output, nor does it directly address correcting electrolyte abnormalities such as hyperkalemia.

7. Which symptom is most likely to improve with carbidopa-levodopa therapy in Parkinson disease?

- A. Tremor**
- B. Paresthesias**
- C. Hyperglycemia**
- D. Headache**

Parkinson disease motor symptoms arise from a dopamine deficit in the nigrostriatal pathways. Carbidopa-levodopa provides dopamine to the brain, with carbidopa blocking peripheral breakdown so more levodopa reaches the brain. This dopaminergic replacement especially helps resting tremor, a hallmark motor symptom driven by this deficit, so tremor is the symptom most likely to improve with therapy. Paresthesias are sensory, not primarily due to dopamine loss, and hyperglycemia or headaches are not typical motor symptoms of Parkinson's that respond to dopaminergic treatment.

8. Which question is most relevant to assess risk for mitral valve stenosis?

- A. Do you frequently get urinary tract infections?**
- B. Have you had a recent episode of pneumonia?**
- C. Did you ever have strep throat during childhood?**
- D. Do you have a family history of heart attack or angina?**

Mitral stenosis is most often a consequence of rheumatic fever following a streptococcal throat infection. The immune response to that infection can scar the mitral valve over time, narrowing the orifice. Because of this causal pathway, asking about a history of strep throat during childhood directly probes a major risk factor for developing mitral stenosis. The other questions don't connect to the valve's pathology: urinary tract infections and pneumonia are unrelated to mitral valve structure, and a family history of heart attack or angina relates to coronary disease risk rather than rheumatic valve disease.

9. A client with partial-thickness burns on the chest, abdomen, and right side arrives in the emergency department. What action should the nurse take first?

- A. Remove the client's clothing**
- B. Evaluate whether the client has inhaled smoke**
- C. Insert a venous access device in an unaffected arm**
- D. Determine the extent of the burns, using the rule of nines**

The most important action is to assess and secure the airway because inhalation injury can rapidly compromise breathing and lead to airway edema even if skin burns seem limited. In a client exposed to smoke, prioritize evaluating for inhalation injury by looking for signs such as facial burns, singed nasal hairs, soot in the sputum, hoarseness, or stridor, and by checking respiratory status and oxygen saturation. If inhalation injury is suspected, prepare to provide high-flow oxygen and be ready for early airway support, including possible endotracheal intubation. Only after addressing the airway should you proceed with other steps like removing clothing to prevent further thermal injury, estimating burn extent, or establishing vascular access, as those actions are important but secondary to securing the airway in this scenario.

10. Which finding is commonly observed in acute spinal shock?

- A. Hypertension**
- B. Bradycardia**
- C. Spastic paralysis**
- D. Urinary retention**

In acute spinal shock, there's a sudden loss of sympathetic nervous system output below the level of injury. That loss leaves the heart under unopposed parasympathetic (vagal) influence, so the heart rate drops—bradycardia is a common, hallmark finding. The same autonomic disruption also tends to cause hypotension from vasodilation, another feature of the acute phase. Spastic paralysis isn't immediate in this state; the initial phase shows flaccid paralysis with areflexia, and spasticity usually develops later as spinal shock resolves. Urinary retention can occur due to loss of bladder reflexes, but bradycardia best reflects the acute autonomic imbalance after injury. Hypertension would be unlikely because the sympathetic drive is diminished.

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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://nmnc4510.examzify.com>

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

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