

Barron/Elsevier Critical Care Registered Nurse (CCRN) 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. What is the ability to noninvasively change functions of a pacemaker using a device placed over the pulse generator called?**
 - A. Programmability**
 - B. Modulation**
 - C. Synchronization**
 - D. Calibration**

- 2. Which type of cardiac arrhythmia is a significant contributor to ischemic stroke?**
 - A. Atrial flutter**
 - B. Bradycardia**
 - C. Atrial fibrillation**
 - D. Ventricular tachycardia**

- 3. Bleeding time is primarily a reflection of which bodily function?**
 - A. Coagulation function**
 - B. Platelet function**
 - C. Vascular function**
 - D. Liver function**

- 4. What is the mechanism of action of furosemide (Lasix) regarding diuresis?**
 - A. Inhibition of kidney reabsorption at the distal convoluted tubule**
 - B. Acts at the descending limb of the loop of Henle**
 - C. Blocks sodium and water reabsorption at the ascending limb of the loop of Henle**
 - D. Inhibits sodium reabsorption at the collecting ducts**

- 5. What is the most common cause of hypoxemia in a surgical patient?**
 - A. Pneumonia**
 - B. Anemia**
 - C. Microatelectasis**
 - D. Fluid overload**

- 6. What should be targeted to help manage oxygen levels in patients with chronic respiratory failure?**
- A. High oxygen saturation**
 - B. Normal blood gas levels**
 - C. Low blood permissive levels**
 - D. Preventing hypoventilation**
- 7. Pneumothorax associated with mechanical ventilation is referred to as what?**
- A. Subcutaneous emphysema**
 - B. Barotrauma**
 - C. Open pneumothorax**
 - D. Tension pneumothorax**
- 8. In which phase of the cardiac cycle does the opening snap occur?**
- A. Systole**
 - B. Early diastole**
 - C. Late diastole**
 - D. Mid-systole**
- 9. Which is the most significant cause of prerenal acute kidney injury?**
- A. Heart failure**
 - B. Dehydration**
 - C. Chronic kidney disease**
 - D. Urinary obstruction**
- 10. Which of the following is a complication of untreated mitral stenosis?**
- A. Left ventricular hypertrophy**
 - B. Right atrial enlargement**
 - C. Cor pulmonale**
 - D. Pulmonary edema**

Answers

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

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Explanations

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1. What is the ability to noninvasively change functions of a pacemaker using a device placed over the pulse generator called?

A. Programmability

B. Modulation

C. Synchronization

D. Calibration

The term "programmability" refers to the ability to noninvasively adjust or modify the functions of a pacemaker using an external programming device that communicates with the pulse generator. This capability allows healthcare providers to change various parameters of the pacemaker, such as pacing rates, output, and sensitivity settings, without needing to perform surgical interventions. By utilizing a programmer placed over the pulse generator, adjustments can be made quickly and effectively, facilitating personalized care for patients with pacemakers. This is particularly beneficial in critical care settings where immediate responses to changes in a patient's condition are necessary. In contrast, modulation refers to a method of varying signals or changing the properties of a wave, synchronization involves coordinating the timing between different devices or signals, and calibration pertains to the process of adjusting the accuracy of a measurement instrument, none of which accurately represent the noninvasive programming capability of pacemakers.

2. Which type of cardiac arrhythmia is a significant contributor to ischemic stroke?

A. Atrial flutter

B. Bradycardia

C. Atrial fibrillation

D. Ventricular tachycardia

Atrial fibrillation is the correct answer because it is the most significant contributor to ischemic stroke among the listed arrhythmias. This condition is characterized by an irregular and often rapid heart rate that can lead to poor blood flow. In atrial fibrillation, the atria do not contract effectively, leading to stasis of blood in the left atrium, particularly in the left atrial appendage. This stasis can result in the formation of thrombi (blood clots). If these clots dislodge, they can travel through the bloodstream and occlude cerebral arteries, leading to an ischemic stroke. In contrast, other arrhythmias listed, such as atrial flutter, can also increase the risk for stroke but are generally less common and their associated risks are not as pronounced as those seen in atrial fibrillation. Bradycardia typically results in slower heart rates that are less likely to contribute directly to stroke. Ventricular tachycardia is often associated with decreased cardiac output and can lead to instability and other complications, but it is not primarily linked with the thromboembolic events that are associated with atrial fibrillation. Thus, atrial fibrillation remains a key focus in the prevention of ischemic strokes due

3. Bleeding time is primarily a reflection of which bodily function?

- A. Coagulation function**
- B. Platelet function**
- C. Vascular function**
- D. Liver function**

Bleeding time is primarily a reflection of platelet function. This test evaluates the ability of platelets to adhere to the site of a vascular injury and aggregate to form a primary hemostatic plug. During the bleeding time assessment, the integrity and functionality of platelets are challenged as the test measures how quickly bleeding stops after a standardized cut is made on the skin. While coagulation function, vascular function, and liver function all play roles in the overall hemostatic process, they are not the primary focus of the bleeding time test. Coagulation factors that are produced by the liver mainly influence the coagulation cascade, which is assessed by other tests such as prothrombin time (PT) or activated partial thromboplastin time (aPTT). Vascular function pertains to the health and functioning of blood vessels, which is crucial for hemostasis but not directly measured by bleeding time. Therefore, the correct answer is indeed that bleeding time is most closely associated with platelet function.

4. What is the mechanism of action of furosemide (Lasix) regarding diuresis?

- A. Inhibition of kidney reabsorption at the distal convoluted tubule**
- B. Acts at the descending limb of the loop of Henle**
- C. Blocks sodium and water reabsorption at the ascending limb of the loop of Henle**
- D. Inhibits sodium reabsorption at the collecting ducts**

Furosemide, commonly known as Lasix, is a loop diuretic that acts primarily at the ascending limb of the loop of Henle in the nephron. Its mechanism of action involves the inhibition of the $\text{Na}^+ - \text{K}^+ - 2\text{Cl}^-$ symporter, which is responsible for the reabsorption of sodium, potassium, and chloride ions in this segment of the nephron. By blocking this symporter, furosemide prevents the reabsorption of these electrolytes, leading to an increase in the osmotic pressure within the tubular fluid. As a result, water follows these solutes through osmosis, leading to increased urine output or diuresis. This mechanism explains its effectiveness in treating conditions such as heart failure, edema, and hypertension, where the goal is to reduce fluid overload. The choice indicating that furosemide acts at the ascending limb of the loop of Henle accurately captures its primary site of action and the physiological processes involved in fluid and electrolyte balance.

5. What is the most common cause of hypoxemia in a surgical patient?

- A. Pneumonia**
- B. Anemia**
- C. Microatelectasis**
- D. Fluid overload**

Microatelectasis is often recognized as the most common cause of hypoxemia in surgical patients due to its frequent occurrence postoperatively. After surgery, particularly during the early phases of recovery, patients may not take deep breaths due to pain or sedation, which can lead to partial collapse of the alveoli, known as atelectasis. This condition reduces surface area for gas exchange and can significantly impair oxygenation, resulting in hypoxemia. Additionally, the likelihood of microatelectasis is increased in patients who undergo general anesthesia, as the controlled ventilation may not fully expand the lungs or recruit all alveoli effectively, especially if adequate incentive spirometry or other requisites for lung expansion are not utilized. Subsequently, this makes monitoring and addressing microatelectasis crucial in the postoperative setting to maintain optimal oxygenation and prevent complications associated with hypoxemia.

6. What should be targeted to help manage oxygen levels in patients with chronic respiratory failure?

- A. High oxygen saturation**
- B. Normal blood gas levels**
- C. Low blood permissive levels**
- D. Preventing hypoventilation**

In managing oxygen levels in patients with chronic respiratory failure, targeting low blood permissive levels is appropriate. This approach is based on the understanding that many individuals with chronic respiratory conditions have adapted to elevated levels of carbon dioxide (hypercapnia), leading to a condition known as chronic hypoventilation. By permitting lower blood gas levels, particularly regarding carbon dioxide, it aids in preventing the suppression of their respiratory drive. Patients with chronic respiratory failure often rely on marked variations in carbon dioxide levels to stimulate their breathing, so maintaining a careful balance is essential. Overly aggressive correction of oxygenation can lead to carbon dioxide retention, which may diminish their respiratory drive and exacerbate respiratory failure. Consequently, focusing on low blood permissive levels allows for a safer management strategy that acknowledges the physiological adaptations these patients have made and helps to avoid complications that arise from sudden changes in their oxygenation status.

7. Pneumothorax associated with mechanical ventilation is referred to as what?

- A. Subcutaneous emphysema**
- B. Barotrauma**
- C. Open pneumothorax**
- D. Tension pneumothorax**

Pneumothorax associated with mechanical ventilation is referred to as barotrauma because this condition occurs when there is an injury to the lung tissues due to high pressures generated during mechanical breathing support. Barotrauma is characterized by the rupture of alveoli, leading to air escaping into the pleural space, which in turn results in pneumothorax. This is particularly relevant in settings where positive pressure ventilation is employed, as excessive pressure can compromise alveolar integrity. Understanding barotrauma is essential in critical care settings, as it can lead to significant respiratory complications. Management of patients on mechanical ventilation requires regular monitoring of airway pressures and adherence to guidelines to prevent elevated pressures that could result in barotrauma and subsequent pneumothorax.

8. In which phase of the cardiac cycle does the opening snap occur?

- A. Systole**
- B. Early diastole**
- C. Late diastole**
- D. Mid-systole**

The opening snap is associated with the rapid filling phase of the ventricles, which occurs during early diastole. This sound is typically a result of the abrupt opening of a stenotic mitral valve, allowing blood to flow from the left atrium into the left ventricle. During early diastole, the pressures in the left atrium are higher than in the left ventricle, leading to the swift movement of blood that generates the opening snap as the valve opens. Understanding the phases of the cardiac cycle is crucial for identifying various heart sounds and their clinical significance. In early diastole, the heart transitions from a contraction phase (systole) into a relaxation period, which allows for the chambers to fill with blood. Therefore, the occurrence of the opening snap specifically during this phase signifies that there is likely an abnormality at the mitral valve level, highlighting its importance in clinical assessment.

9. Which is the most significant cause of prerenal acute kidney injury?

- A. Heart failure
- B. Dehydration**
- C. Chronic kidney disease
- D. Urinary obstruction

The most significant cause of prerenal acute kidney injury is dehydration. Prerenal AKI typically occurs due to a decrease in blood flow to the kidneys, which can happen in scenarios where there is insufficient fluid volume in the body. Dehydration, which can result from various factors such as excessive fluid loss through vomiting, diarrhea, or inadequate fluid intake, significantly reduces the perfusion of the kidneys. When the kidneys do not receive enough blood flow, they may struggle to function properly, leading to impaired filtration and ultimately to acute kidney injury. Maintaining adequate hydration is essential for kidney function, as the kidneys rely on a proper flow of blood to filter waste and maintain homeostasis in the body. In contrast, heart failure may also impact renal perfusion, but dehydration is a more direct and significant contributor to prerenal causes because it directly correlates with volume status. Chronic kidney disease typically refers to long-standing kidney damage and is classified as an intrinsic cause of kidney injury, and urinary obstruction refers to postrenal causes where damage occurs after urine has been produced. Therefore, dehydration stands out as the most significant contributing factor to prerenal acute kidney injury.

10. Which of the following is a complication of untreated mitral stenosis?

- A. Left ventricular hypertrophy
- B. Right atrial enlargement**
- C. Cor pulmonale
- D. Pulmonary edema

When mitral stenosis is untreated, it leads to an increased pressure in the left atrium due to impaired blood flow from the left atrium to the left ventricle. This prolonged pressure elevation causes the left atrium to dilate and enlarge, resulting in right atrial enlargement. As pressure within the left atrium increases, it can also lead to complications such as atrial fibrillation, which further exacerbates the risk of thromboembolic events due to stagnant blood flow. The left atrium's enlargement primarily affects the right atrium as well due to the shared anatomical and physiological relationships. Other complications like left ventricular hypertrophy and pulmonary edema are more directly associated with other cardiac conditions. Cor pulmonale, which refers to right-sided heart failure due to chronic lung disease, might be a secondary consequence of prolonged untreated mitral stenosis but is not a direct complication of it. Therefore, right atrial enlargement is the most relevant complication directly attributable to untreated mitral stenosis.

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://barronelsevierccrn.examzify.com>

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

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