

NCCAA RE- CERTIFICATION PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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 expected effect of chronic alcohol use on MAC levels?**
 - A. Increases MAC
 - B. Decreases MAC
 - C. No effect on MAC
 - D. Fluctuating effect on MAC

- 2. At what depth will a diacritic notch be observed when floating a pulmonary artery catheter?**
 - A. 30 cm
 - B. 40 cm
 - C. 50 cm
 - D. 60 cm

- 3. What condition is indicated by a PAO₂ of 60 mmHg during a general anesthetic case?**
 - A. Hypoxia
 - B. Hypercapnia
 - C. Respiratory acidosis
 - D. Endobronchial intubation

- 4. What is the vapor pressure of Desflurane?**
 - A. 170 mmHg
 - B. 240 mmHg
 - C. 669 mmHg
 - D. 500 mmHg

- 5. What is the first step in termination of norepinephrine actions at the receptor?**
 - A. Metabolism by MAO in the synaptic cleft
 - B. Reuptake into the nerve terminal
 - C. Metabolism by COMT in plasma
 - D. Diffusion away from the receptor

- 6. What could be a possible cause for a sudden decrease in ETCO₂ during a total hip replacement?**
- A. Hypothermia
 - B. Tourniquet release
 - C. Venous air emboli
 - D. Endobronchial migration of the ETT
- 7. Which side effect is associated with the use of etomidate as an IV anesthetic?**
- A. Serotonin syndrome
 - B. Postoperative nausea and vomiting
 - C. Respiratory depression
 - D. Cardiac dysrhythmias
- 8. What is included in anatomic dead space?**
- A. Volume of gas in alveoli
 - B. Volume of gas in conducting airways
 - C. Volume of gas in the pleural space
 - D. Volume of gas in the connective tissue
- 9. In which scenario is jet ventilation absolutely contraindicated?**
- A. Presence of cricoid or larynx damage
 - B. Patient with asthma
 - C. History of sleep apnea
 - D. Obesity related airway issues
- 10. What does the term 'absolute refractory period' refer to?**
- A. Open Na channels when action potential is reached
 - B. 30mV membrane potential
 - C. Closed Na channels in a conformational change
 - D. Resting potential of -70mV

Answers

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

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Explanations

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1. What is the expected effect of chronic alcohol use on MAC levels?

- A. Increases MAC
- B. Decreases MAC**
- C. No effect on MAC
- D. Fluctuating effect on MAC

Chronic alcohol use is known to have a significant impact on the central nervous system, and one of its effects is a decrease in the minimum alveolar concentration (MAC) of anesthetic agents. MAC is defined as the concentration of anesthetic in the alveoli that prevents movement in response to surgical stimulation in 50% of subjects. When someone is a chronic alcohol user, their neurological responses are altered due to the neuroadaptive changes in their brain. This adaptation generally leads to a higher tolerance to certain drugs, including anesthetics, resulting in a reduced MAC requirement. Essentially, chronic alcohol exposure sensitizes the body to the depressant effects of anesthetics, allowing for a lower concentration to achieve the same anesthetic effect. Therefore, the expected effect of chronic alcohol use is to decrease the MAC levels needed for anesthesia. This understanding is essential for clinicians when determining the appropriate dosages and making anesthetic management decisions for patients with a history of chronic alcohol use.

2. At what depth will a diacritic notch be observed when floating a pulmonary artery catheter?

- A. 30 cm
- B. 40 cm**
- C. 50 cm
- D. 60 cm

The depth at which a diacritic notch is observed when floating a pulmonary artery catheter is typically around 40 cm. The diacritic notch represents the transition point from the right atrium to the right ventricle as the catheter moves through the heart and into the pulmonary artery. Understanding this measurement is crucial for accurately placing the catheter and ensuring effective monitoring and treatment. Proper placement is essential because it provides critical information regarding cardiac function and hemodynamics. The choice of 40 cm reflects a commonly accepted depth based on standard anatomical considerations and clinical practice guidelines, which help healthcare professionals gauge the location of the catheter within the heart and vascular system. The other depth options—30 cm, 50 cm, and 60 cm—do not align with typical clinical observations for the diacritic notch, leading to inaccuracies in placement if selected. Thus, 40 cm is the correct depth for floating a pulmonary artery catheter and achieving reliable therapeutic and diagnostic results.

3. What condition is indicated by a PAO₂ of 60 mmHg during a general anesthetic case?

- A. Hypoxia**
- B. Hypercapnia
- C. Respiratory acidosis
- D. Endobronchial intubation

A partial arterial oxygen pressure (PAO₂) of 60 mmHg indicates hypoxia, which is a condition characterized by low levels of oxygen in the blood. Under normal circumstances, a PAO₂ value is typically around 80-100 mmHg for a healthy individual, and anything below 60 mmHg signifies that the patient is likely not receiving adequate oxygenation. In the context of general anesthesia, maintaining proper oxygenation is critical, and a PAO₂ of 60 mmHg can lead to significant physiological consequences if not addressed. Hypoxia can result from various factors, including impaired lung function, inadequate ventilation, or issues with oxygen delivery. While other conditions such as hypercapnia (excess carbon dioxide in the blood), respiratory acidosis (a condition where the lungs cannot remove enough carbon dioxide), and endobronchial intubation (placement of the endotracheal tube further down the bronchial tree, potentially obstructing airflow) may be relevant in different scenarios, they do not directly correlate with the low arterial oxygen pressure reading that indicates hypoxia. Hence, the focus remains on the implications of a PAO₂ reading of 60 mmHg, confirming the presence of hypoxia in the patient.

4. What is the vapor pressure of Desflurane?

- A. 170 mmHg
- B. 240 mmHg
- C. 669 mmHg**
- D. 500 mmHg

Desflurane is an inhalational anesthetic that is known for its low blood solubility and high volatility. This property is reflected in its vapor pressure, which is a critical parameter when considering its use in anesthesia. The vapor pressure of a substance is the pressure exerted by its vapor when it is in equilibrium with its liquid phase at a given temperature. For Desflurane, the vapor pressure is approximately 669 mmHg at 20 degrees Celsius. This high vapor pressure indicates that Desflurane readily evaporates, allowing for effective delivery as an anesthetic agent during surgical procedures. Its characteristics make it particularly useful for rapid inductions and recoveries in anesthesia due to how easily it can be vaporized and inhaled. The other given values do not accurately represent the vapor pressure of Desflurane, which is established through chemical data and clinical usage, underscoring the importance of understanding the characteristics of anesthetics in practice.

5. What is the first step in termination of norepinephrine actions at the receptor?

- A. Metabolism by MAO in the synaptic cleft
- B. Reuptake into the nerve terminal
- C. Metabolism by COMT in plasma
- D. Diffusion away from the receptor**

The correct answer focuses on the initial phase of terminating norepinephrine's effects at the receptor site, which begins with the diffusion of norepinephrine away from the receptor. Once norepinephrine has been released into the synaptic cleft, it binds to adrenergic receptors to exert its physiological effects. For these effects to stop, the molecule must first disengage from the receptor, which occurs mainly through diffusion. After this initial diffusion, other processes come into play, such as reuptake into the nerve terminal, where norepinephrine can be repackaged or metabolized, and enzymatic breakdown through monoamine oxidase (MAO) or catechol-O-methyltransferase (COMT). However, the very first action that takes place in the termination process is that norepinephrine moves away from its receptor site, which sets the stage for its subsequent clearance from the synaptic space.

6. What could be a possible cause for a sudden decrease in ETCO₂ during a total hip replacement?

- A. Hypothermia
- B. Tourniquet release
- C. Venous air emboli**
- D. Endobronchial migration of the ETT

The chosen answer points to a significant concern in the context of anesthesia and surgical procedures, particularly during a total hip replacement. A sudden decrease in end-tidal carbon dioxide (ETCO₂) can indicate a rapid change in the patient's physiology, particularly in the lungs' ability to eliminate carbon dioxide. When venous air emboli occur, air enters the venous bloodstream, leading to an obstruction in the pulmonary circulation. This can drastically reduce the amount of blood reaching the lungs and, consequently, the carbon dioxide being expelled from the body during exhalation. The result is a sharp drop in the ETCO₂ levels since there is less carbon dioxide being eliminated from the bloodstream. This condition can lead to serious complications, including hypotension, hypoxemia, and potential cardiovascular collapse, making it a critical situation that requires immediate attention. Other options, while relevant, do not account for a sudden decrease in ETCO₂ in the same way. Hypothermia can affect metabolic rates and ventilation but does not typically cause a rapid drop in carbon dioxide levels. Tourniquet release could lead to a temporary increase in ETCO₂ due to the sudden return of blood flow from the extremity, rather than a decrease. Endobronchial migration of

7. Which side effect is associated with the use of etomidate as an IV anesthetic?

- A. Serotonin syndrome
- B. Postoperative nausea and vomiting**
- C. Respiratory depression
- D. Cardiac dysrhythmias

The correct answer highlights postoperative nausea and vomiting as a side effect associated with the use of etomidate. While etomidate is favored for its minimal cardiovascular and respiratory effects, it still carries the risk of postoperative nausea and vomiting, which can occur after its use. This side effect is particularly relevant in the context of outpatient procedures, where nausea can complicate recovery. Etomidate has a different adverse profile compared to some other anesthetics, which might cause more significant respiratory depression or cardiovascular instability. Although respiratory depression, cardiac dysrhythmias, and serotonin syndrome are important considerations with various anesthetic agents, they are not predominantly linked with etomidate. Instead, etomidate's primary concern remains the incidence of nausea and vomiting during the recovery period following its administration.

8. What is included in anatomic dead space?

- A. Volume of gas in alveoli
- B. Volume of gas in conducting airways**
- C. Volume of gas in the pleural space
- D. Volume of gas in the connective tissue

Anatomic dead space refers to the parts of the respiratory system where gas exchange does not occur. Specifically, this space includes the volume of gas in the conducting airways, such as the trachea and bronchi. These airways are responsible for transporting air to the alveoli where gas exchange takes place, but they do not participate in the exchange of oxygen and carbon dioxide themselves. The gas present in the conducting airways is considered "dead space" because it does not contribute to the ventilatory function of the lungs, meaning that even though air is moving through these passages, it does not reach the areas of the lungs where it can be utilized for gas exchange. Understanding this concept is crucial for assessing respiratory efficiency and function in various clinical settings. The other options presented do not fall under the definition of anatomic dead space. The volume of gas in alveoli is involved in gas exchange and therefore is not classified as dead space. The pleural space contains intrapleural pressure but is not a site for gas exchange, while the connective tissue does not serve a purpose related to the volume of gas within the respiratory pathways. Thus, focusing on the conducting airways clarifies what constitutes anatomic dead space.

9. In which scenario is jet ventilation absolutely contraindicated?

A. Presence of cricoid or larynx damage

B. Patient with asthma

C. History of sleep apnea

D. Obesity related airway issues

Jet ventilation is a technique used for providing ventilation to patients with compromised airways, particularly during certain medical procedures. However, its use is limited by the anatomical and physiological barriers present in specific scenarios. The presence of cricoid or larynx damage represents a scenario where jet ventilation is absolutely contraindicated. This is because, in cases of damage to these structures, the integrity of the airway is compromised, which poses a significant risk of further injury and worsens the potential for airway obstruction. Jet ventilation relies on the ability to deliver high-pressure gas through a narrow passage, and any existing trauma to the airway can increase the risk of subglottic edema, laceration, or complete airway collapse. Thus, using jet ventilation in these cases can lead to severe complications, making it an inappropriate choice. Other scenarios, such as having asthma, a history of sleep apnea, and obesity-related airway issues, do impose challenges for ventilation but do not categorically eliminate the possibility of using jet ventilation. In these cases, clinicians might explore alternative ventilation strategies or consider modifications to the approach while closely monitoring the patient's condition. However, the critical nature of structural compromise seen with cricoid or larynx damage creates a clear delineation where jet ventilation is prohibited

10. What does the term 'absolute refractory period' refer to?

A. Open Na channels when action potential is reached

B. 30mV membrane potential

C. Closed Na channels in a conformational change

D. Resting potential of -70mV

The term 'absolute refractory period' refers to the phase during which a neuron is unable to generate another action potential, no matter how strong the stimulus is. This occurs primarily because sodium (Na⁺) channels, which are crucial for the depolarization phase of an action potential, become inactive after they open. During this time, the Na⁺ channels undergo a conformational change and remain closed, preventing further ion flow and thus inhibiting the initiation of another action potential. During the absolute refractory period, the state of the Na⁺ channels is key. The channels that opened in response to a stimulus cannot be reopened until they return to their resting state, even if a significant depolarizing current is applied. Therefore, the correct interpretation of the absolute refractory period emphasizes the closed Na⁺ channels and their change in conformation, rendering them temporarily inactive. Other options relate to different aspects of neuronal activity but do not accurately describe the absolute refractory period. The opening of Na⁺ channels does occur during the action potential but does not characterize the refractory period itself. Membrane potentials like 30mV and resting potentials of -70mV represent different points within the action potential cycle but are not specifically tied to the absolute refractory period.

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://nccaarecertification.examzify.com>

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

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