

# VASCULAR ACCESS BOARD CERTIFICATION PRACTICE EXAM (SAMPLE) STUDY GUIDE



## SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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<https://vascularaccessboard.examzify.com>



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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 type of catheter is typically recommended for patients receiving chemotherapy?**
  - A. Peripheral catheter
  - B. Midline catheter
  - C. A totally implantable port
  - D. Short-term central venous catheter
- 2. What effect does the Valsalva maneuver have on the body?**
  - A. Reduces heart rate significantly
  - B. Increases intrathoracic pressure
  - C. Enhances venous return to the heart
  - D. Improves lung function during exercise
- 3. Which site is appropriate for PICC placement in the upper extremity?**
  - A. Saphenous vein
  - B. Basilic vein
  - C. Popliteal vein
  - D. Cephalic vein
- 4. Phentolamine is primarily used as an antidote for extravasation of which medication class?**
  - A. Antibiotics
  - B. Vasopressors
  - C. Opioids
  - D. Anticoagulants
- 5. What is a significant advantage of using the axillary vein for central venous access?**
  - A. Lower infection risk compared to internal jugular placement
  - B. Suitable for patients with chronic kidney disease
  - C. Higher success rate of insertion
  - D. Less risk of thrombosis

- 6. What segment of the spine gives rise to the musculocutaneous nerve?**
- A. C5-C7
  - B. C7-T1
  - C. C4-C6
  - D. C3-C5
- 7. What are potential systemic complications of central venous access?**
- A. Localized swelling and redness
  - B. Cardiac arrhythmias and air embolism
  - C. Infection and phlebitis
  - D. Nausea and vomiting
- 8. What does the term "flush protocol" refer to?**
- A. A guideline for catheter insertion
  - B. A method for clearing catheters using saline or heparin
  - C. A schedule for dressing changes
  - D. A technique for patient monitoring
- 9. What complication is associated with the use of central venous catheters?**
- A. Significant arterial embolism
  - B. Infection at the catheter site
  - C. Pneumothorax during insertion
  - D. All of the above
- 10. What type of solution is typically used to flush vascular access devices?**
- A. Heparin solution
  - B. Normal saline
  - C. Ringer's lactate
  - D. Dextrose solution

## **Answers**

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

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## **Explanations**

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## 1. Which type of catheter is typically recommended for patients receiving chemotherapy?

- A. Peripheral catheter
- B. Midline catheter
- C. A totally implantable port**
- D. Short-term central venous catheter

Choosing the right type of catheter for patients receiving chemotherapy is crucial due to the specific needs associated with chemotherapy treatments. A totally implantable port, commonly referred to as a port-a-cath, is the recommended choice because it provides several advantages over other types of access devices. Firstly, a totally implantable port offers long-term venous access, which is essential for patients who require repeated treatments, as chemotherapy can span several weeks or months. This type of catheter is implanted under the skin, minimizing the risks of infection since a portion of the catheter is not exposed outside the body. The design of the port allows it to be accessed with a special needle, which reduces discomfort for the patient during repeated uses. Additionally, totally implantable ports have a lower incidence of thrombosis and occlusion when compared to peripheral catheters or midline catheters. The central location in large veins allows for the administration of irritant chemotherapy drugs without the same risk of phlebitis or infiltration that can occur with peripheral access. In contrast, other options such as peripheral catheters are typically used for short-term access and are not ideal for patients requiring ongoing chemotherapy. Midline catheters offer intermediate access; however, they also cannot remain in place as

## 2. What effect does the Valsalva maneuver have on the body?

- A. Reduces heart rate significantly
- B. Increases intrathoracic pressure**
- C. Enhances venous return to the heart
- D. Improves lung function during exercise

The Valsalva maneuver involves a person attempting to exhale forcefully with a closed mouth and nose, which leads to a significant increase in intrathoracic pressure. This maneuver is often used in clinical settings, particularly to understand cardiovascular responses or to facilitate certain medical procedures. When the intrathoracic pressure increases, several physiological changes occur. For instance, increased pressure within the thoracic cavity can lead to temporary alterations in blood flow and heart function, and it also affects venous return. The maneuver compresses the veins that return blood to the heart, impacting the flow dynamics during the maneuver. This increase in intrathoracic pressure is a key feature of the Valsalva maneuver, as it can influence how blood flows back to the heart, the heart rate, and blood pressure, as well as assist in various medical assessments. It is not primarily aimed at reducing heart rate or improving lung function during exercise; instead, its mechanism is much more focused on altering pressure dynamics within the thoracic region.

### 3. Which site is appropriate for PICC placement in the upper extremity?

- A. Saphenous vein
- B. Basilic vein**
- C. Popliteal vein
- D. Cephalic vein

*The basilic vein is a suitable site for peripherally inserted central catheter (PICC) placement in the upper extremity due to its anatomical location and characteristics. It is a large vein that runs along the inner aspect of the arm, offering ample space for catheter insertion. The basilic vein typically has good access and a larger diameter, which makes it ideal for accommodating the catheter, resulting in reduced risk of complications such as kinking or blockage. Additionally, its position provides a longer pathway to the central venous system, which is essential for the intended uses of a PICC line. In contrast, the other options do not serve as appropriate sites for PICC placement in the upper extremity. The saphenous vein, primarily located in the lower extremities, is not suitable for upper extremity catheter placement. The popliteal vein, also located in the leg behind the knee, is not accessible from the arm and does not contribute to upper extremity access. Although the cephalic vein is an alternative site in the upper extremity, it is smaller and may have a higher incidence of complications when compared to the basilic vein, making the basilic vein a preferred choice for PICC insertions.*

### 4. Phentolamine is primarily used as an antidote for extravasation of which medication class?

- A. Antibiotics
- B. Vasopressors**
- C. Opioids
- D. Anticoagulants

*Phentolamine is primarily used as an antidote for the extravasation of vasopressors. Vasopressors, such as norepinephrine and epinephrine, are medications that constrict blood vessels to increase blood pressure. When these drugs extravasate, they can cause significant tissue damage due to their vasoconstrictive properties, leading to ischemia and necrosis. Phentolamine is an alpha-adrenergic antagonist that can help to counteract the effects of the vasoconstriction caused by extravasated vasopressors. By blocking alpha-adrenergic receptors, phentolamine facilitates vasodilation and improves blood flow to the affected area, thus minimizing tissue injury and promoting healing. Understanding the role of phentolamine in this context highlights its importance in managing extravasation incidents involving vasopressors, distinguishing it from other drug classes where the use of this particular antidote would not apply.*

**5. What is a significant advantage of using the axillary vein for central venous access?**

- A. Lower infection risk compared to internal jugular placement**
- B. Suitable for patients with chronic kidney disease
- C. Higher success rate of insertion
- D. Less risk of thrombosis

*Using the axillary vein for central venous access has a significant advantage of lower infection risk compared to internal jugular placement. The axillary vein is located deeper within the body under the pectoralis major muscle and is less exposed to external contamination than the internal jugular vein, which is more superficial and exposed to the environment. The axillary region also tends to be less frequently accessed, which further contributes to a reduced risk of infection for procedures involving central venous catheters. In addition, the anatomical positioning of the axillary vein minimizes patient discomfort and procedural complications related to access, embodying a strategic benefit for patients requiring long-term central venous access. This aspect is particularly beneficial for patients needing frequent blood draws or therapies, as it can reduce the number of invasive procedures and limits the potential sites where infection could occur. While considerations regarding the suitability for chronic kidney disease, success rates of insertion, and risks of thrombosis are important in a broader context of vascular access, they do not convey the same advantage in terms of current infection control practices and sterile procedural protocols as those presented by the lower infection risk with axillary vein access.*

**6. What segment of the spine gives rise to the musculocutaneous nerve?**

- A. C5-C7**
- B. C7-T1
- C. C4-C6
- D. C3-C5

*The musculocutaneous nerve is primarily formed from the spinal segments C5, C6, and C7. These segments are involved in the emergence of the nerve from the brachial plexus, which innervates the muscles of the anterior compartment of the arm, notably the biceps brachii and brachialis, as well as providing sensory innervation to part of the forearm. When considering the spinal segments that give rise to the musculocutaneous nerve, C5, C6, and C7 provide the necessary nerve roots for its formation. The roots originate from the upper trunk of the brachial plexus and contribute to the peripheral nerve that is essential for arm function. The other spinal segment ranges provided do not correlate with the musculocutaneous nerve. C7-T1 pertains to other nerves in the plexus, while C4-C6 and C3-C5 include segments that do not contribute to the musculocutaneous nerve pathway. Thus, it establishes that C5-C7 is indeed the correct choice for the segments that are responsible for the musculocutaneous nerve.*

## 7. What are potential systemic complications of central venous access?

- A. Localized swelling and redness
- B. Cardiac arrhythmias and air embolism**
- C. Infection and phlebitis
- D. Nausea and vomiting

Cardiac arrhythmias and air embolism are recognized potential systemic complications associated with central venous access. When a central venous catheter is inserted, especially if it is not properly placed or if certain precautions are not taken, it can lead to serious effects on the cardiovascular system. For instance, cardiac arrhythmias can occur if the catheter tip is positioned too close to the heart or irritates the cardiac tissue, potentially disrupting normal electrical conduction. Air embolism can happen if air enters the vascular system during the insertion or removal of a central line; this can obstruct blood flow and lead to significant complications such as stroke or cardiac arrest. In contrast, other options like localized swelling and redness are more localized reactions and do not describe systemic complications. Infection and phlebitis, while serious, are likewise more commonly associated with local effects, despite having the potential to lead to systemic issues if not managed properly. Nausea and vomiting are non-specific symptoms that may arise from various causes and are not directly linked to the complications of central venous access. This understanding of the systemic complications helps in recognizing the critical nature of proper procedure and monitoring in vascular access.

## 8. What does the term "flush protocol" refer to?

- A. A guideline for catheter insertion
- B. A method for clearing catheters using saline or heparin**
- C. A schedule for dressing changes
- D. A technique for patient monitoring

The term "flush protocol" specifically refers to the method of clearing catheters using saline or heparin. This protocol is crucial for maintaining the patency of vascular access devices and preventing occlusions. Regular flushing helps to clear the catheter of blood and any potential clot formations, thereby ensuring that the catheter remains open and functional. The use of saline or heparin in flushing serves to both hydrate the system and provide anticoagulant properties, which further aids in the prevention of clot formation. In clinical practice, these protocols outline the specific volumes and frequency of flushing, as well as the appropriate solutions to use, all of which are essential for optimizing patient care and maximizing the life of the vascular access device.

## 9. What complication is associated with the use of central venous catheters?

- A. Significant arterial embolism
- B. Infection at the catheter site
- C. Pneumothorax during insertion
- D. All of the above**

*The answer encompasses a range of complications that can be associated with the use of central venous catheters (CVCs). Each of these complications represents a significant risk that healthcare professionals must consider when placing and managing these devices. The risk of significant arterial embolism is present because central venous catheters can inadvertently puncture an artery during insertion, potentially leading to embolism if thrombi or air are introduced into the arterial circulation. Infection at the catheter site is a well-documented complication. Central venous catheters provide a direct pathway into the bloodstream, increasing the risk of bacterial colonization and subsequent bloodstream infections. Proper aseptic technique and vigilant site care are crucial to mitigating this risk. Pneumothorax during insertion is another serious complication that can occur, especially when placing a central catheter in the subclavian or internal jugular vein. The needle or catheter can inadvertently puncture the pleural space, leading to air accumulation in the pleural cavity and respiratory complications. Considering these factors, the answer "D. All of the above" is correct because it acknowledges that CVCs can be associated with multiple serious complications, all of which are important to recognize and prevent in clinical practice.*

## 10. What type of solution is typically used to flush vascular access devices?

- A. Heparin solution
- B. Normal saline**
- C. Ringer's lactate
- D. Dextrose solution

*Normal saline is the most commonly used solution to flush vascular access devices due to its isotonic properties, which minimize the risk of fluid shifts and cellular damage. This solution helps to maintain the patency of the vascular access device by preventing the formation of blood clots and ensuring that the lumen remains clear for medication administration or fluid infusions. Because it closely matches the body's electrolyte balance and osmolarity, normal saline is safe and effective for maintaining vascular access devices. It is easy to prepare and store, making it practical for clinical use. This solution also helps to dilute any potentially harmful substances that may be left in the catheter or to remove any debris that could compromise the functionality of the device. While heparin solution is sometimes used in certain circumstances to prevent clot formation in long-term catheters, it is not typically used for routine flushing due to its anticoagulant properties and the need for careful monitoring. Ringer's lactate and dextrose solutions have specific clinical applications but are not suitable for flushing vascular access devices in general practice, as they alter electrolyte balance and do not effectively prevent clotting in the same way normal saline does.*

## 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](mailto:hello@examzify.com).

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

<https://vascularaccessboard.examzify.com>

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

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