

INVASIVE CARDIOLOGY PRACTICE TEST (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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. How does AngioJet aspirate clot?**
 - A. By directing 6 high-speed jets of saline from the catheter tip backwards
 - B. By suction alone from a vacuum pump
 - C. By ultrasound-assisted fragmentation
 - D. By chemical thrombolytics
- 2. Aspirin (ASA) is classified as which of the following?**
 - A. NSAID and antiplatelet agent
 - B. Thrombolytic agent
 - C. ACE inhibitor
 - D. Calcium channel blocker
- 3. Which of the following is a potential embolic complication of IABP?**
 - A. Emboli: thrombus, plaque, air
 - B. Hypoglycemia
 - C. DVT in leg
 - D. Jaundice
- 4. Pericardial effusion is best described as what?**
 - A. Collection of fluid or blood in the pericardium
 - B. Blood clot in the heart chambers
 - C. Accumulation of air in the pericardial space
 - D. Calcification of pericardial layers
- 5. Which item is not typically listed as equipment for a DSA femoral run-off?**
 - A. Step table with bolus chase capability
 - B. Power injector
 - C. Non-ionic contrast
 - D. Sterile drapes
- 6. During creation of a pericardial window, the pericardial sac is dilated to what size?**
 - A. 8-10F
 - B. 2-4F
 - C. 12-14F
 - D. 20F

- 7. Which closure device uses a non-absorbable nitinol clip to mechanically seal the arteriotomy?**
- A. Starclose closure device
 - B. Perclose closure device
 - C. Angioseal closure device
 - D. Mynx closure device
- 8. How many biopsy samples are typically taken during an endomyocardial biopsy?**
- A. 3-5 samples
 - B. 1-2 samples
 - C. 6-8 samples
 - D. 8-10 samples
- 9. Non-ionic, low-osmolar contrast agents have fewer adverse reactions due to which characteristic?**
- A. They do not affect the blood-brain barrier
 - B. They are more nephrotoxic
 - C. They cause more allergic reactions
 - D. They are always hyperosmolar
- 10. Which of the following is a potential complication of cardiac catheterization?**
- A. Pseudoaneurysm
 - B. MI
 - C. Arrhythmia
 - D. Leukocytosis

Answers

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

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Explanations

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1. How does AngioJet aspirate clot?

- A. By directing 6 high-speed jets of saline from the catheter tip backwards**
- B. By suction alone from a vacuum pump
- C. By ultrasound-assisted fragmentation
- D. By chemical thrombolytics

AngioJet operates by rheolytic thrombectomy, using multiple high-velocity saline jets to create a suction effect that pulls clot into the catheter for removal. The jets are emitted from the catheter tip and directed proximally (backwards), so the rapid saline flow generates a low-pressure zone that entrains and aspirates the thrombus into the device while also fragmenting it. This combination of hydrodynamic fragmentation and simultaneous aspiration is the mechanism behind clot removal with AngioJet. Suction alone wouldn't explain the clot disruption and removal, ultrasound-assisted fragmentation uses acoustic energy rather than jet-induced suction, and chemical thrombolytics rely on enzymatic dissolution rather than mechanical aspiration.

2. Aspirin (ASA) is classified as which of the following?

- A. NSAID and antiplatelet agent**
- B. Thrombolytic agent
- C. ACE inhibitor
- D. Calcium channel blocker

Aspirin is classified as an NSAID and an antiplatelet agent. It's acetylsalicylic acid, part of the NSAID family because it inhibits cyclooxygenase enzymes. Its antiplatelet effect comes from irreversible inhibition of COX-1 in platelets, which blocks formation of thromboxane A₂, a key promoter of platelet aggregation. Because platelets lack a nucleus, they can't synthesize new COX-1, so the antiplatelet effect lasts for the platelet's lifespan (about 7–10 days), even though aspirin's direct presence in plasma is short-lived. This dual classification explains its use: low-dose aspirin provides sustained antiplatelet protection, while higher doses produce broader anti-inflammatory effects. It's not a thrombolytic that dissolves clots, not an ACE inhibitor, and not a calcium channel blocker.

3. Which of the following is a potential embolic complication of IABP?

- A. Emboli: thrombus, plaque, air**
- B. Hypoglycemia
- C. DVT in leg
- D. Jaundice

Embolic complications with an intra-aortic balloon pump come from material that can enter the systemic circulation during use. Thrombus can form on the catheter or within the circuit and be released with the device's cycles. Atherosclerotic plaque in the aorta can be disturbed by catheter manipulation, sending plaque debris downstream. Air can also be introduced into the circuit and act as an embolus. Any of these emboli can travel to the brain, heart, kidneys, or limbs and cause ischemia. The other options don't fit because hypoglycemia is a metabolic issue, a leg DVT is a venous issue related to immobility or access rather than an arterial embolus from the IABP, and jaundice relates to liver or biliary problems rather than an embolic event.

4. Pericardial effusion is best described as what?

- A. Collection of fluid or blood in the pericardium
- B. Blood clot in the heart chambers
- C. Accumulation of air in the pericardial space
- D. Calcification of pericardial layers

Abnormal collection of fluid within the pericardial sac surrounding the heart is what defines a pericardial effusion. The pericardial space normally contains only a small amount of lubricating fluid; when excess fluid accumulates, the effusion forms and can be serous, bloody, or purulent depending on the cause. This is distinct from a clot inside the heart chambers, which would be an intracardiac thrombus; from air in the pericardial space, which is pneumopericardium; and from calcification of the pericardial layers, which is seen with pericardial calcification often related to constrictive processes.

5. Which item is not typically listed as equipment for a DSA femoral run-off?

- A. Step table with bolus chase capability
- B. Power injector
- C. Non-ionic contrast
- D. Sterile drapes

The key idea here is what specific equipment enhances dynamic, contrast-enhanced imaging of the leg arteries. A step table with bolus chase capability is valuable because it lets you synchronize imaging with the arrival of the contrast bolus, so you can clearly track flow from the femoral artery down to the distal run-off vessels. A power injector is essential for delivering a consistent, rapid bolus at a controlled rate, which is critical for high-quality subtraction angiography and reliable visualization of stenoses or occlusions. Non-ionic contrast is used because it provides good image quality with a lower risk of adverse reactions compared with older ionic agents, making it safer for multiple injections during the run-off study. Sterile drapes are important for maintaining a sterile field, but they are general procedural supplies rather than part of the specialized imaging equipment used for the DSA femoral run-off, so they are not typically listed as equipment specific to this imaging study.

6. During creation of a pericardial window, the pericardial sac is dilated to what size?

- A. 8-10F
- B. 2-4F
- C. 12-14F
- D. 20F

The key idea is choosing a window size that allows reliable drainage of pericardial fluid without creating a large defect that could cause complications. In a pericardial window, the opening is typically dilated to about 8–10 French. French size indicates the diameter, so 8–10F is roughly 2.7–3.3 mm. This size provides a dependable channel for ongoing drainage to prevent tamponade, even if fluid production is brisk, while keeping the defect small enough to minimize risk of bleeding or injury. A window that is too small (2–4F) may become obstructed and fail to drain effectively, whereas a window that is too large (12–14F or 20F) increases the risk of surgical complications and excessive drainage.

7. Which closure device uses a non-absorbable nitinol clip to mechanically seal the arteriotomy?

A. Starclose closure device

B. Perclose closure device

C. Angioseal closure device

D. Mynx closure device

The key idea is how the arteriotomy is sealed: by mechanically closing the puncture with a clip instead of sutures or plugs. The StarClose closure device deploys a small nitinol clip that grasps and approximates the two edges of the arterial puncture, effectively sealing the arteriotomy. Nitinol is a shape-memory, durable material, so the clip stays in place and provides permanent mechanical closure rather than dissolving. This differentiates it from other devices: sutured closure uses stitches to close the puncture, collagen-plug systems seal with a plug and anchor, and polymer-based sealants create a temporary extravascular seal that typically resorbs. So, the StarClose device is the one that uses a non-absorbable nitinol clip to mechanically seal the arteriotomy.

8. How many biopsy samples are typically taken during an endomyocardial biopsy?

A. 3-5 samples

B. 1-2 samples

C. 6-8 samples

D. 8-10 samples

During an endomyocardial biopsy, a small amount of myocardial tissue is collected from the right ventricle using a bioprobe. The goal is to obtain enough tissue to allow accurate histology and special tests, while keeping the risk of complications low. Taking about three to five samples provides the right balance: it minimizes sampling error and increases diagnostic yield without adding unnecessary risk. Fewer samples can miss disease, while many more raise the chance of perforation, arrhythmias, or tamponade with limited additional benefit. So, three to five samples is the typical number.

9. Non-ionic, low-osmolar contrast agents have fewer adverse reactions due to which characteristic?

A. They do not affect the blood-brain barrier

B. They are more nephrotoxic

C. They cause more allergic reactions

D. They are always hyperosmolar

The important idea is that non-ionic, low-osmolar contrast agents cause fewer adverse reactions because their chemical properties minimize harmful interactions with body tissues, especially the brain. Being non-ionic means the molecules don't dissociate into charged particles, and having lower osmolality means the solution is closer to our blood's own osmolality. This reduces osmotic water shifts and the inflammatory-like or irritant effects on the vascular endothelium, which helps protect the blood-brain barrier from transient disruption. With less disruption of the BBB, there are fewer neurotoxic or neurologic adverse events, so overall reactions are gentler. Therefore, the characteristic tied to fewer adverse reactions is the reduced effect on the blood-brain barrier due to lower osmolality and non-ionic formulation. The other statements aren't consistent with how these agents behave: they are not more nephrotoxic, they don't cause more allergic reactions, and they are not always hyperosmolar (in fact, they are low-osmolar).

10. Which of the following is a potential complication of cardiac catheterization?

A. Pseudoaneurysm

B. MI

C. Arrhythmia

D. Leukocytosis

Complications after cardiac catheterization often involve the vascular access site. A pseudoaneurysm forms when the arterial wall is breached at the access site and blood tracks into surrounding tissue while maintaining a connection to the artery. This creates a pulsatile hematoma that can grow if not treated. It's a classic, well-recognized vascular complication of arterial access and is most likely to occur with femoral or radial entry, especially with larger sheaths, inadequate hemostasis, or anticoagulation. Management is typically ultrasound-guided thrombin injection or compression, with surgery reserved for large or expanding cases. MI can occur if there's coronary occlusion, severe spasm, or dissection during catheter manipulation, and arrhythmias can arise from catheter contact with the conduction system, but these are less common and not as specific to the access-site complication as a pseudoaneurysm. Leukocytosis is not a direct, expected complication of the procedure.

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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://invasivecardiology.examzify.com>

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

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