Cardiac Catheterization 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

1. What is the normal pressure in the left atrium / pulmonary capillary wedge?

A. 2-12 mmHg

B. 5-15 mmHg

C. 0-5 mmHg

D. 12-20 mmHg

2. When there is presence of plaque a decision will be made as to which procedure will be needed... name the procedures?

A. Coronary artery bypass grafting (CABG), angioplasty, stenting, atherectomy

B. Pacemaker implantation, ablation, resynchronization therapy

C. Valve repair, replacement, and transplantation

D. Echocardiography, MRI, and CT angiography

3. What pressure is obtained when the balloon is deflated?

A. Right atrial pressure

B. Left atrial pressure

C. Pulmonary artery pressure

D. Systemic arterial pressure

4. Which procedure creates a new route for blood flow around blocked coronary arteries?

A. CABG

B. Angioplasty

C. Stenting

D. Atherectomy

5. In the Modified Bernoulli equation, p1 represents:

A. Pressure of the proximal chamber

B. Pressure of the distal chamber

C. Mean transvalvular gradient

D. Pressure drop across the valve

6. What is the most common insertion site for a left heart catheterization?

A. Percutaneous femoral artery

B. Radial artery

C. Brachial artery

D. Carotid artery

7. When evaluating a stenotic valve, which chamber experiences pressure rise?

A. Proximal

B. Distal

C. Apical

D. Basal

8. Which of the following is a possible acute cardiac event during the procedure?

A. Heart attack

B. Improved vision

C. Enhanced athletic performance

D. Chronic back pain

9. What is the most common procedure in the cath lab?

A. Coronary angiogram

B. Left ventriculography

C. Pacemaker insertion

D. Aortic valve replacement

10. What is the normal systolic and diastolic pressure range in the aorta?

A. 100-140 mmHg (systolic); 60-90 mmHg (diastolic)

B. 120-160 mmHg (systolic); 70-100 mmHg (diastolic)

C. 90-120 mmHg (systolic); 50-70 mmHg (diastolic)

D. 140-180 mmHg (systolic); 90-110 mmHg (diastolic)

Answers

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

Explanations

1. What is the normal pressure in the left atrium / pulmonary capillary wedge?

A. 2-12 mmHg

B. 5-15 mmHg

C. 0-5 mmHg

D. 12-20 mmHg

Left atrial pressure, which is approximated by the pulmonary capillary wedge pressure when the catheter is wedged, reflects the left-sided filling pressure of the heart. In a healthy resting adult, this pressure is low. The normal range commonly cited for the left atrial pressure (and hence PCWP) is about 2–12 mmHg, with the upper end around 12 mmHg. Values above this suggest elevated left-sided filling pressures (as seen in left heart failure or significant valvular disease), while values well below this are not typical for resting conditions. Among the given options, 2–12 mmHg best fits the normal range.

2. When there is presence of plaque a decision will be made as to which procedure will be needed... name the procedures?

A. Coronary artery bypass grafting (CABG), angioplasty, stenting, atherectomy

B. Pacemaker implantation, ablation, resynchronization therapy

C. Valve repair, replacement, and transplantation

D. Echocardiography, MRI, and CT angiography

When plaque narrows the coronary arteries, the goal is to restore blood flow through revascularization. The main approaches are revascularization options that bypass or open blocked vessels. Angioplasty uses a balloon to widen the narrowed segment. Stenting places a scaffold in the artery to keep it open after angioplasty. Atherectomy removes or reduces the plaque material to enlarge the lumen. If the disease involves multiple vessels or is not suitable for a catheter-based approach, coronary artery bypass grafting creates new paths for blood to reach the heart muscle by routing around blocked arteries using grafts. The choice depends on how many vessels are diseased, where the blockages are, the anatomy, and patient factors. Other options like pacemaker implantation, ablation, resynchronization therapy, valve surgery, or imaging studies address rhythm, valvular disease, or diagnostics, not the plaque-related blockages treated with these revascularization procedures.

3. What pressure is obtained when the balloon is deflated?

A. Right atrial pressure

B. Left atrial pressure

C. Pulmonary artery pressure

D. Systemic arterial pressure

The balloon-tipped pulmonary artery catheter can read different pressures depending on whether the balloon is inflated or deflated. When the balloon is inflated, the catheter wedges in a small branch of the pulmonary artery, which isolates a column of blood and yields the left atrial pressure estimate (pulmonary capillary wedge pressure). When the balloon is deflated, the catheter's tip remains in the pulmonary artery and the pressure readout reflects the pressures within the pulmonary arterial system itself. Therefore, with the balloon deflated, the pressure you obtain is the pulmonary artery pressure.

4. Which procedure creates a new route for blood flow around blocked coronary arteries?

A. CABG

B. Angioplasty

C. Stenting

D. Atherectomy

Creating a new route around blocked coronary arteries is done with coronary artery bypass grafting. In this operation, a healthy blood vessel from elsewhere in the body, such as the internal mammary artery or a saphenous vein, is grafted to the coronary artery beyond the blockage. The graft acts as an alternate pathway, delivering blood to heart muscle that would otherwise be starved by the blocked segment. This approach is particularly helpful when multiple vessels are diseased or when the blocked arteries aren't ideal for opening with a balloon or stent. Angioplasty uses a balloon to dilate a narrowed artery, sometimes followed by stenting to keep it open; it does not create a new pathway. Stenting involves placing a scaffold inside the same artery to hold it open, not bypassing it. Atherectomy removes plaque from inside the artery to enlarge the existing lumen, again without creating a new route.

5. In the Modified Bernoulli equation, p1 represents:

A. Pressure of the proximal chamber

B. Pressure of the distal chamber

C. Mean transvalvular gradient

D. Pressure drop across the valve

The essential idea is that the Modified Bernoulli equation links the pressure drop across a valve to the flow velocity through the valve. It states p1 − p2 = 4v^2, where p1 is the pressure on the side before the narrowing (upstream or proximal chamber) and p2 is the pressure beyond the narrowing (downstream). So p1 represents the proximal chamber pressure—in practice, the pressure in the chamber that feeds the valve (for aortic stenosis, the left ventricular systolic pressure). The downstream pressure p2 is the pressure in the chamber beyond the valve (the aorta, in that example). This is why the other options don't fit: the distal chamber pressure is p2, the mean transvalvular gradient is the overall ΔP, and the pressure drop across the valve is the gradient ΔP itself, not p1 alone.

6. What is the most common insertion site for a left heart catheterization?

A. Percutaneous femoral artery

B. Radial artery

C. Brachial artery

D. Carotid artery

Access to the arterial system is required to perform a left heart catheterization, and the femoral artery is the standard entry point because it readily accommodates the larger diagnostic catheters and sheaths and provides a relatively straight path up the aorta to the aortic root and coronary arteries. It also allows reliable compression afterward if bleeding occurs. While radial access is increasingly used and offers lower bleeding risk in many cases, the femoral route remains the default in many labs due to its size and ease of use for left heart work. The brachial or carotid routes carry higher risks of complications and are less favored. So, the percutaneous femoral artery is the most common insertion site.

7. When evaluating a stenotic valve, which chamber experiences pressure rise?

A. Proximal

B. Distal

C. Apical

D. Basal

When a valve is stenotic, the obstruction causes resistance to forward flow, so the pressure builds up in the chamber immediately upstream of the narrowed opening. That proximal chamber has to generate higher pressure to push blood through the narrowed valve, especially during systole in cases like aortic stenosis, where the left ventricle must overcome the increased afterload. The downstream chamber experiences less pressure rise because the flow is impeded after the valve. Apical or basal are anatomical regions, not the site of the pressure increase due to the valve narrowing. So the chamber right before the stenosis experiences the pressure rise.

8. Which of the following is a possible acute cardiac event during the procedure?

A. Heart attack

B. Improved vision

C. Enhanced athletic performance

D. Chronic back pain

An acute myocardial infarction can occur during a cardiac procedure because manipulating the coronary arteries may trigger plaque rupture, thrombus formation, coronary dissection, or severe vasospasm, all of which can abruptly cut off oxygen to heart muscle. This sudden loss of perfusion causes myocardial injury typical of a heart attack, and in the procedural setting the team watches for chest pain (often blunted by sedation), new ECG changes such as ST-segment elevations, and hemodynamic instability. Prompt intervention to restore flow is essential. The other options are not acute cardiac events during a procedure: improving vision, enhanced athletic performance, or chronic back pain do not reflect acute coronary ischemia or intra-procedural heart injury.

9. What is the most common procedure in the cath lab?

A. Coronary angiogram

B. Left ventriculography

C. Pacemaker insertion

D. Aortic valve replacement

The most common cath lab procedure is diagnostic coronary angiography. This test visualizes the coronary arteries by injecting contrast and taking X-ray images, allowing clinicians to see where blockages or narrowings exist. It serves as the frontline diagnostic step for suspected coronary artery disease and often determines the next move in treatment, whether that's medical management or proceeding to an intervention. Because nearly all workups for chest pain or suspected CAD start with mapping the coronary arteries, this angiography is performed far more frequently than other procedures. The alternatives—pacemaker insertion, left ventriculography, or aortic valve replacement—are more specialized or less routinely needed. Pacemaker implantation is common in certain patient groups but not a universal cath lab procedure; left ventriculography is used selectively to assess ventricular function; and aortic valve replacement is a major intervention, done far less often than a standard diagnostic angiogram.

10. What is the normal systolic and diastolic pressure range in the aorta?

A. 100-140 mmHg (systolic); 60-90 mmHg (diastolic)

B. 120-160 mmHg (systolic); 70-100 mmHg (diastolic)

C. 90-120 mmHg (systolic); 50-70 mmHg (diastolic)

D. 140-180 mmHg (systolic); 90-110 mmHg (diastolic)

Normal pressures in the aorta reflect the systemic arterial pressure during a cardiac cycle. The peak systolic pressure produced by the left ventricle is typically about 100–140 mmHg, and the diastolic pressure maintained between beats is about 60–90 mmHg. This range provides adequate perfusion to organs, including the coronary arteries, while avoiding excessive aortic wall stress. Values outside this range—either higher or lower—are not normal central aortic pressures in a healthy adult. Therefore, 100–140 mmHg systolic with 60–90 mmHg diastolic best fits normal central aortic pressure.

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://cardiaccatheterization.examzify.com

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