PRE-TACHYARRHYTHMIA 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.

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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!

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Questions

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1. Which of the following is a Class I indication for primary prevention ICD?

A. LVEF ≤ 35% NYHA II-III

B. LVEF ≤ 40% NYHA II-III

C. LVEF ≤ 50% NYHA II-III

D. LVEF ≤ 30% NYHA I

2. When configuring a dual shock coil with a 'hot can' in Biotronik, the SVC coil polarity is

A. The opposite of the can

B. The same as the can

C. Depends on programming

D. Not programmable

3. What is the usefulness of the excitable gap in a reentrant circuit?

A. It prolongs the cycle length

B. It increases conduction velocity

C. It shortens the refractory period

D. When the stimulus hits the excitable gap it breaks the rhythm

4. In which tachyarrhythmias are adenosine most reliably effective for termination?

A. Atrial fibrillation and atrial flutter

B. Ventricular tachycardia

C. AVNRT and AVRT

D. Junctional tachycardia

5. Which description best defines the excitable gap in a reentrant circuit?

A. The refractory region

B. The boundary between chambers

C. The portion of tissue that can be excited

D. The non-excitable zone

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6. In Brugada syndrome, which medication class is generally avoided because it can exacerbate conduction abnormalities?

A. Sodium channel blockers

B. Beta-blockers

C. Calcium channel blockers

D. Potassium channel blockers

7. BIOTRONIK dual coil ICD leads inter-coil spacing options?

A. 16-18 cm

B. 10-12 cm

C. 20-22 cm

D. 5-7 cm

8. ATP works best on what type of arrhythmia?

A. Atrial fibrillation

B. Re-entrant

C. Ventricular fibrillation

D. Sinus tachycardia

9. What is a typical rate range for junctional tachycardia?

A. 60-120 bpm

B. 40-60 bpm

C. 100-150 bpm

D. 120-180 bpm

10. Which therapies are available in the current ICD?

A. Brady pacing

B. Defibrillation

C. Anti-tachycardia pacing

D. All of the above

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Answers

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

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Explanations

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1. Which of the following is a Class I indication for primary prevention ICD?

A. LVEF ≤ 35% NYHA II-III

B. LVEF ≤ 40% NYHA II-III

C. LVEF ≤ 50% NYHA II-III

D. LVEF ≤ 30% NYHA I

A Class I indication for primary prevention ICD is reserved for patients with severely reduced LV function (LVEF ≤ 35%) who have at least moderate heart failure symptoms (NYHA II–III) despite optimized medical therapy. This combination identifies those at highest risk of sudden cardiac death who are most likely to benefit from an ICD to prevent it. The scenario with LVEF ≤ 35% and NYHA II–III fits this criterion, so it is the strongest, most guideline-supported choice. Higher LVEF thresholds (such as ≤40% or ≤50%) or being NYHA class I do not meet the Class I primary prevention indication.

2. When configuring a dual shock coil with a 'hot can' in Biotronik, the SVC coil polarity is

A. The opposite of the can

B. The same as the can

C. Depends on programming

D. Not programmable

Shocking polarity with a dual-shock coil and a hot can is about shaping the current path through the heart. In this Biotronik setup, the can serves as one electrode and the SVC coil is an additional electrode that contributes to the shock vector. Having the SVC coil share the same polarity as the can ensures all electrodes drive current in the same direction across the ventricles, producing a consistent, effective current density through the heart. If the SVC coil were the opposite polarity, part of the energy could circulate between coils rather than crossing the myocardium, reducing defibrillation effectiveness. In this configuration, the polarity is effectively fixed to match the can, so the best choice is that the SVC coil is the same polarity as the can.

3. What is the usefulness of the excitable gap in a reentrant circuit?

A. It prolongs the cycle length

B. It increases conduction velocity

C. It shortens the refractory period

D. When the stimulus hits the excitable gap it breaks the rhythm

The excitable gap is the part of a reentrant circuit that has recovered enough to be excited while the rest remains refractory. This window is useful because a premature stimulus arriving during the excitable gap can propagate into the circuit and interact with the circulating impulse in a way that disrupts the loop, effectively terminating the reentrant tachycardia. In other words, the premature beat can break the rhythm by creating a disruption in the circuit's propagation. If the stimulus occurs outside this gap, tissue is still refractory and the impulse can't propagate, so little or no effect on the rhythm occurs. The excitable gap is not about prolonging cycle length, increasing conduction velocity, or shortening the refractory period itself; its practical role is to provide a vulnerable window where a premature stimulus can terminate the reentrant circuit.

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4. In which tachyarrhythmias are adenosine most reliably effective for termination?

A. Atrial fibrillation and atrial flutter

B. Ventricular tachycardia

C. AVNRT and AVRT

D. Junctional tachycardia

Adenosine works by briefly blocking AV nodal conduction. Tachyarrhythmias that rely on the AV node as part of a reentrant circuit are most reliably terminated because interrupting AV nodal flow breaks the reentry. The classic examples are AV nodal reentrant tachycardia and AV reentrant tachycardia that use the AV node in their circuit. When the AV node is silenced for a moment, the reentrant loop can't continue, so the heart returns to a normal rhythm or a slower atrial rhythm. This mechanism explains why adenosine is not consistently curative in other tachycardias. Atrial fibrillation or flutter originate in the atria, and shortening AV nodal conduction does not stop the atrial activity itself. Ventricular tachycardia is driven by a ventricular circuit independent of the AV node, so adenosine rarely terminates it. Junctional tachycardia, often automatic rather than reentrant, is typically not terminated by adenosine, though the AV node block it causes can transiently affect the rhythm. So the most reliable termination occurs in AV nodal-dependent reentrant tachycardias (AVNRT and AVRT) because the key action is transient AV nodal block that interrupts the reentrant circuit.

5. Which description best defines the excitable gap in a reentrant circuit?

A. The refractory region

B. The boundary between chambers

C. The portion of tissue that can be excited

D. The non-excitable zone

The excitable gap is the portion of tissue in a reentrant circuit that has recovered enough to be excited again when the circulating impulse arrives. As the wavefront travels, tissue behind it remains refractory (non-excitable), while the ahead tissue recovers and becomes excitable. That recovered, ready-to-fire segment is the excitable gap, and it allows the impulse to re-enter the loop and sustain the reentrant rhythm. The other options describe non-excitable or boundary areas, which don't fit this concept.

6. In Brugada syndrome, which medication class is generally avoided because it can exacerbate conduction abnormalities?

A. Sodium channel blockers

B. Beta-blockers

C. Calcium channel blockers

D. Potassium channel blockers

In Brugada syndrome, the heart's conduction is already impaired due to dysfunctional sodium channels. Drugs that block sodium channels further slow depolarization and conduction, especially in the right ventricular outflow tract, which can precipitate dangerous ventricular arrhythmias. That makes sodium channel blockers the class to avoid in this condition. Examples like flecainide, propafenone, and procainamide can worsen the conduction abnormality and provoke arrhythmias, so they're avoided in daily management. Other drug classes don't directly reduce the sodium current in the same way, so they're not the primary concern here, though each medication should be used with caution in Brugada patients.

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7. BIOTRONIK dual coil ICD leads inter-coil spacing options?

A. 16-18 cm

B. 10-12 cm

C. 20-22 cm

D. 5-7 cm

Inter-coil spacing is the distance between the two defibrillation coils along a dual-coil ICD lead. That spacing sets the shock vector, which is the path the delivered energy takes through the chest and heart. In BIOTRONIK dual-coil leads, the design uses a moderate, mid-range spacing so the proximal coil sits high in the superior vena cava/right atrial region and the distal coil sits in the right ventricle. This arrangement creates a broad current path through the ventricles, improving the likelihood of effective defibrillation and producing more consistent thresholds across different body sizes. If the coils were too close together, the vector could be less effective for engaging the ventricles; if they were too far apart, energy delivery could become less efficient or the coils could interact unfavorably. That balanced, mid-range spacing is why this option is considered correct.

8. ATP works best on what type of arrhythmia?

A. Atrial fibrillation

B. Re-entrant

C. Ventricular fibrillation

D. Sinus tachycardia

Anti-tachycardia pacing works by interrupting a re-entrant conduction loop. In a re-entrant tachycardia, the heart's impulse circuits around a pathway, sustaining a fast rhythm. Delivering a train of paced beats at a rate faster than the tachycardia can invade the circuit and reset or overdrive the tissue enough that the circuit can no longer sustain itself, effectively terminating the rhythm. This is why the approach is best suited for re-entrant tachycardias: the mechanism relies on disrupting a stable conduction loop. Atrial fibrillation is a chaotic, non-structured atrial activity without a single re-entrant circuit to reset. Ventricular fibrillation is chaotic ventricular activity that requires defibrillation, not pacing. Sinus tachycardia is a normal, physiologic speeding up of a single pacemaker and does not involve a propagating re-entrant circuit to disrupt with ATP.

9. What is a typical rate range for junctional tachycardia?

A. 60-120 bpm

B. 40-60 bpm

C. 100-150 bpm

D. 120-180 bpm

Junctional tachycardia is a fast rhythm that originates from the AV junction, so the ventricular activation is driven by automaticity or a reentry circuit in that area and the QRS is typically narrow. The rate reflects how quickly the AV junction is firing, and in many teaching contexts this pace sits in the lower tachycardia range, around 60–120 beats per minute. This range is fast enough to be considered tachycardia compared with a normal resting junctional rhythm (which is slower) but not as high as many atrial or AV-reentrant tachyarrhythmias that commonly reach well above 120 bpm. Therefore, 60–120 bpm is viewed as the representative rate range for junctional tachycardia.

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10. Which therapies are available in the current ICD?

A. Brady pacing

B. Defibrillation

C. Anti-tachycardia pacing

D. All of the above

Modern ICDs are multi-therapy devices designed to handle a range of rhythms. They can provide bradycardia pacing to prevent slowing of the heart rate, use anti-tachycardia pacing to terminate many tachycardias without a shock, and deliver a defibrillation shock when a dangerous VT or VF is detected. Because current ICDs include all three capabilities, the correct answer is all of the above.

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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://pretachyarrhythmia.examzify.com

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

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