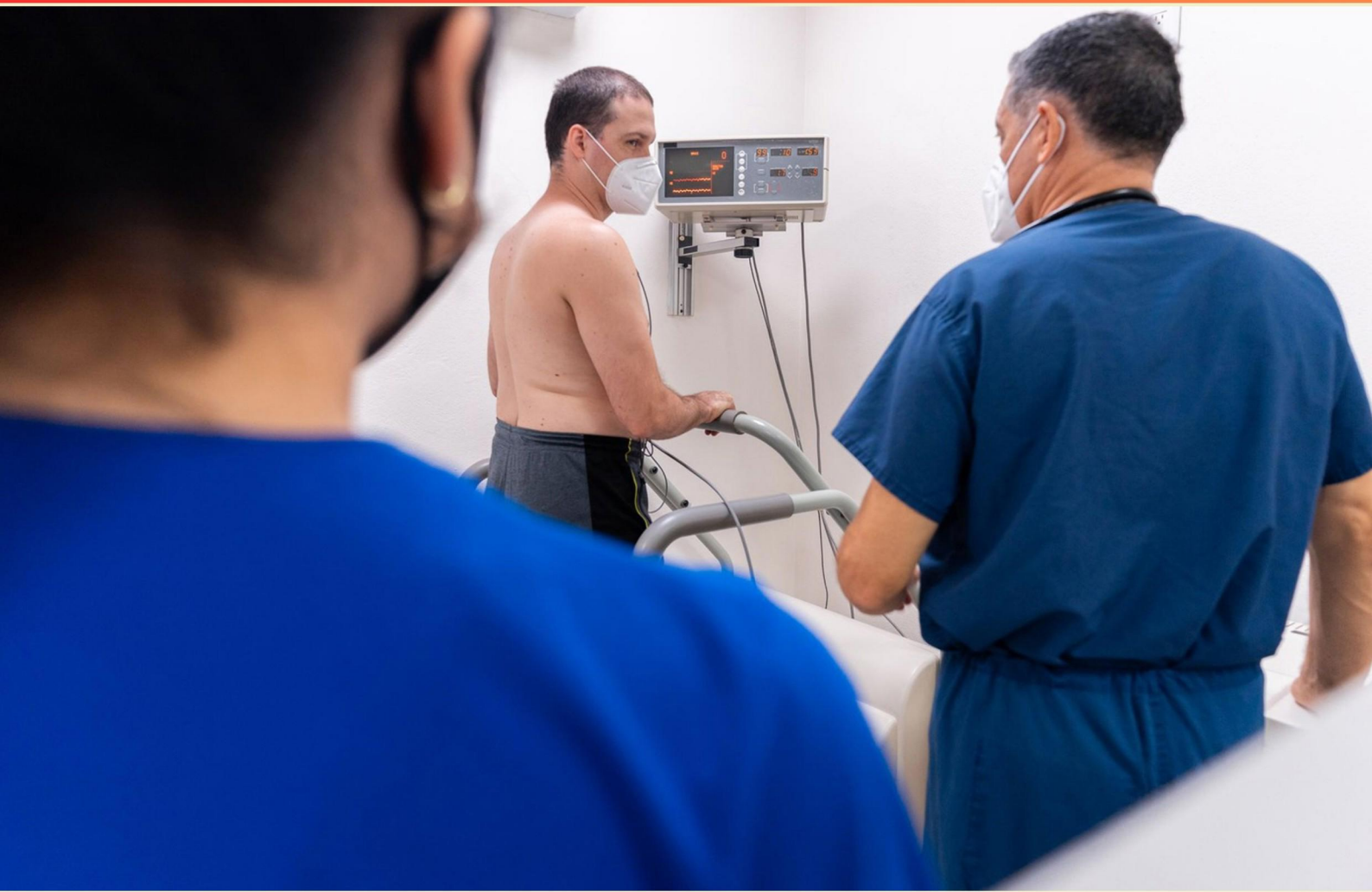


CCI CERTIFIED CARDIOGRAPHIC TECHNICIAN (CCT) PRACTICE EXAM (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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 phase is the resting phase, ready to receive stimulus?**
 - A. Phase 4 of the action potential
 - B. Phase 0 of the action potential
 - C. Phase 1 of the action potential
 - D. Phase 2 of the action potential
- 2. Which plane divides the body from front to back?**
 - A. Frontal plane
 - B. Sagittal plane
 - C. Transverse plane
 - D. Lateral plane
- 3. Which statement best describes artifact identification on ECG?**
 - A. Irregular, nonphysiologic deflections or constant 50/60 Hz interference indicate artifact
 - B. Sharp P waves indicate artifact
 - C. Regular, slow baseline drifting indicates artifact
 - D. Absent QRS complexes indicate electrode fracture
- 4. In ambulatory monitoring, how should you document a patient-reported symptom correlate that is not seen on the ECG at that moment?**
 - A. Delete the event from the record.
 - B. Tell the patient to return with the same symptoms.
 - C. Record the time of the symptom, note whether an arrhythmia was observed, and document any limitations; correlate with subsequent tracings when available and escalate if symptoms persist.
 - D. Ignore if no arrhythmia is seen.
- 5. Which medication can prolong the QT interval and may predispose to torsades de pointes?**
 - A. Lisinopril
 - B. Ondansetron
 - C. Ibuprofen
 - D. Metformin

- 6. Which finding demonstrates a paced rhythm capture on ECG?**
- A. P waves or QRS following pacing spikes
 - B. Absence of pacing spikes
 - C. Ventricular fibrillation baseline
 - D. Normal sinus rhythm with no spikes
- 7. Which protocol is commonly used for post myocardial infarction patients or those requiring a slower starting pace?**
- A. Bruce Protocol
 - B. Modified Bruce Protocol
 - C. Naughton Protocol
 - D. Balke Protocol
- 8. What is the ethical obligation of a CCT when incidental arrhythmia is detected in a patient with no known history?**
- A. Inform supervising physician and document findings; do not diagnose or treat beyond scope; ensure patient safety and proper referral.
 - B. Treat arrhythmia immediately
 - C. Ignore incidental finding
 - D. Only inform patient without documentation
- 9. What rate range characterizes sinus tachycardia, and what are common clinical triggers?**
- A. Rate greater than 100 bpm; triggers include pain, fever, hypovolemia, anxiety, caffeine, and stimulants
 - B. Rate 60-90 bpm; triggers include rest and sleep
 - C. Rate 40-60 bpm; triggers include vagal maneuvers
 - D. Rate 120-180 bpm; triggers include dehydration and diabetes
- 10. Bruce Protocol Stage 2 corresponds to which speed and grade?**
- A. 3.0 mph at 12%
 - B. 3.0 mph at 14%
 - C. 3.4 mph at 14%
 - D. 3.4 mph at 16%

Answers

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

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Explanations

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1. Which phase is the resting phase, ready to receive stimulus?

- A. Phase 4 of the action potential**
- B. Phase 0 of the action potential
- C. Phase 1 of the action potential
- D. Phase 2 of the action potential

The resting phase is when the cell's membrane potential sits at a stable, negative value and the cell is not actively depolarizing. This is Phase 4 in the cardiac action potential. During this phase, the membrane is mainly permeable to potassium and inward currents are low, which maintains the negative potential and keeps the cell ready to respond to a stimulus. When a stimulus arrives, voltage-gated channels open and a rapid depolarization occurs (Phase 0). The following phases then describe the sequence of depolarization, plateau, and repolarization that result from ion flows, but the resting readiness to respond is defined by this Phase 4.

2. Which plane divides the body from front to back?

- A. Frontal plane
- B. Sagittal plane
- C. Transverse plane
- D. Lateral plane**

The main idea is understanding how the body is split by standard anatomical planes. The plane that divides the body from front to back runs vertically and separates the anterior (front) from the posterior (back) parts. This is the frontal (coronal) plane, sometimes simply called the frontal plane. The sagittal plane splits left from right, and the transverse (horizontal) plane splits top from bottom. A "lateral plane" isn't a standard anatomical term; lateral refers to the sides, not a specific division of the body into front and back. In practice, a frontal (coronal) view is what shows front-to-back relationships.

3. Which statement best describes artifact identification on ECG?

- A. Irregular, nonphysiologic deflections or constant 50/60 Hz interference indicate artifact**
- B. Sharp P waves indicate artifact
- C. Regular, slow baseline drifting indicates artifact
- D. Absent QRS complexes indicate electrode fracture

Artifact is any electrical signal on the ECG that does not originate from the heart. The most reliable telltale is irregular, nonphysiologic deflections or interference that can appear as a continuous 50 or 60 Hz hum from nearby equipment. This power-line noise is classic for artifact because it doesn't follow the heart's rhythm and can obscure the true ECG tracings. Sharp P waves are part of normal atrial activity and thus reflect the heart's electrical activity, not artifact. Regular, slow baseline drifting can occur from factors like respiration or electrode impedance, but it's less specific to artifact than irregular noise or power-line interference. Absent QRS complexes point to issues with recording or very abnormal rhythm in a way that isn't the general description of artifact.

4. In ambulatory monitoring, how should you document a patient-reported symptom correlate that is not seen on the ECG at that moment?

- A. Delete the event from the record.
- B. Tell the patient to return with the same symptoms.
- C. Record the time of the symptom, note whether an arrhythmia was observed, and document any limitations; correlate with subsequent tracings when available and escalate if symptoms persist.**
- D. Ignore if no arrhythmia is seen.

When ambulatory monitoring yields a patient-reported symptom without a matching ECG event at that moment, the essential step is to document it with precise timing and context. Record the exact time the symptom occurred, describe what the patient felt (types of sensation, duration, intensity), and note whether any arrhythmia is visible on the tracing around that time. Also document any data limitations—lead position, signal quality, patient-reported timing, or device issues—that could affect detection. Then compare the symptom window with subsequent tracings as they become available to see if a rhythm disturbance emerges nearby in time. If symptoms persist or recur, escalate the situation with the clinician for further assessment or device-related adjustments. This approach preserves important, actionable information for accurate diagnosis and patient care. Deleting the event loses potentially crucial information. Asking the patient to return later delays care and misses the current data. Ignoring the symptom because no arrhythmia is seen risks missing clinically relevant events.

5. Which medication can prolong the QT interval and may predispose to torsades de pointes?

- A. Lisinopril
- B. Ondansetron**
- C. Ibuprofen
- D. Metformin

Prolongation of the QT interval reflects delayed ventricular repolarization, which can create a substrate for torsades de pointes, a dangerous form of polymorphic ventricular tachycardia. Some drugs lengthen the QT by blocking the heart's rapid delayed rectifier potassium current (IKr) through hERG channels, slowing repolarization and extending the action potential. Ondansetron is a antiemetic known to cause QT prolongation, especially at higher intravenous doses or when electrolyte balance is disturbed. Because it can extend repolarization, it may predispose susceptible patients to torsades de pointes. In practice, monitor the ECG in patients with risk factors (electrolyte disturbances, bradycardia, congenital long QT) and be cautious about combining with other QT-prolonging drugs. The other listed medications do not typically prolong the QT interval or increase torsades risk.

6. Which finding demonstrates a paced rhythm capture on ECG?

A. P waves or QRS following pacing spikes

B. Absence of pacing spikes

C. Ventricular fibrillation baseline

D. Normal sinus rhythm with no spikes

Capture means the pacemaker's electrical impulse actually depolarizes the heart. On the ECG, this appears as a pacing spike followed by tissue activity. When you see a pacing spike followed by a P wave, it shows atrial capture; when you see a pacing spike followed by a QRS complex, it shows ventricular capture. Either pattern demonstrates paced rhythm capture because the impulse is producing depolarization and contraction. If spikes occur without any subsequent deflection, that's loss of capture. No spikes at all mean there's no pacing. A chaotic baseline (ventricular fibrillation) or a normal sinus rhythm with no spikes does not reflect paced capture.

7. Which protocol is commonly used for post myocardial infarction patients or those requiring a slower starting pace?

A. Bruce Protocol

B. Modified Bruce Protocol

C. Naughton Protocol

D. Balke Protocol

When choosing a treadmill test for someone who recently had a heart attack or who starts at a slower pace, the key idea is to use a protocol that begins at a lower workload and increases more gradually. That safety-minded approach helps prevent excessive myocardial demand early in the test while still allowing the clinician to gather meaningful data. The Modified Bruce protocol fits this need because it adjusts the standard Bruce test to start at a lighter level and to progress more slowly than the original. That means the patient can begin exercising with less stress on the heart and gradually ramp up, which reduces the risk of inducing ischemia or overwhelming the patient, while still providing a reliable assessment of functional capacity and cardiovascular response. It's especially helpful for post MI patients or those with limited conditioning, where a gentler, longer progression improves safety and the chances of obtaining a complete, interpretable test. Other protocols aim for different pacing schemes—some are more abrupt or steeper, or designed for very deconditioned individuals—so the Modified Bruce is the preferred balance for post MI or slow starters because it starts lower and progresses more gradually.

8. What is the ethical obligation of a CCT when incidental arrhythmia is detected in a patient with no known history?

- A. Inform supervising physician and document findings; do not diagnose or treat beyond scope; ensure patient safety and proper referral.**
- B. Treat arrhythmia immediately
- C. Ignore incidental finding
- D. Only inform patient without documentation

Spotting an incidental arrhythmia in a patient with no known history underscores the duty to escalate through the proper care channel. A CCT's role is to monitor, document, and recognize abnormalities, not to diagnose or treat rhythm disorders. The ethical obligation is to inform the supervising physician about the finding and to document it thoroughly—including the rhythm pattern or strip available, the time observed, the patient's vitals, and any symptoms or history. This ensures patient safety by enabling timely medical assessment and appropriate referral to a clinician who can evaluate significance, order further tests, and determine management. Do not diagnose or treat beyond your scope; avoid making clinical decisions in isolation. If the patient shows instability—such as chest pain, syncope, or severe changes in vital signs—follow emergency protocols immediately. The combination of reporting to the supervising physician, documenting the finding, and arranging proper referral maintains patient safety and professional accountability.

9. What rate range characterizes sinus tachycardia, and what are common clinical triggers?

- A. Rate greater than 100 bpm; triggers include pain, fever, hypovolemia, anxiety, caffeine, and stimulants**
- B. Rate 60-90 bpm; triggers include rest and sleep
- C. Rate 40-60 bpm; triggers include vagal maneuvers
- D. Rate 120-180 bpm; triggers include dehydration and diabetes

Sinus tachycardia means the heart is beating faster than normal, but the rhythm still comes from the sinus node with normal-looking P waves and normal conduction. The defining point is a rate exceeding 100 beats per minute. This faster rate is the body's normal physiologic response to increased demand or sympathetic activation, not a misfire of the heart's rhythm. Common clinical triggers include pain, fever, loss of circulating volume (hypovolemia or dehydration), anxiety, caffeine, and other stimulants. These factors stimulate the sympathetic nervous system or reduce parasympathetic tone, speeding up the sinus node to meet metabolic needs or cope with stress. Why the other descriptions aren't correct for sinus tachycardia: resting rates in the 60s to 90s are normal, not tachycardic; rates in the 40s to 60s are bradycardia; and a rate in the 120–180 range can occur with exertion or other tachyarrhythmias, but the most typical teaching points for sinus tachycardia emphasize a rate over 100 and common physiologic triggers such as pain, fever, dehydration/hypovolemia, anxiety, and stimulants.

10. Bruce Protocol Stage 2 corresponds to which speed and grade?

- A. 3.0 mph at 12%
- B. 3.0 mph at 14%
- C. 3.4 mph at 14%**
- D. 3.4 mph at 16%

Bruce Protocol uses three-minute stages with increasing speed and incline to progressively raise exercise workload. Stage 2 applies a speed of 3.4 mph with a 14% grade, a clear step up from Stage 1 in both pace and incline. This combination yields a higher metabolic demand while the test remains time-consistent, making it the correct mapping for Stage 2 in this protocol version.

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://ccicct.examzify.com>

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

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