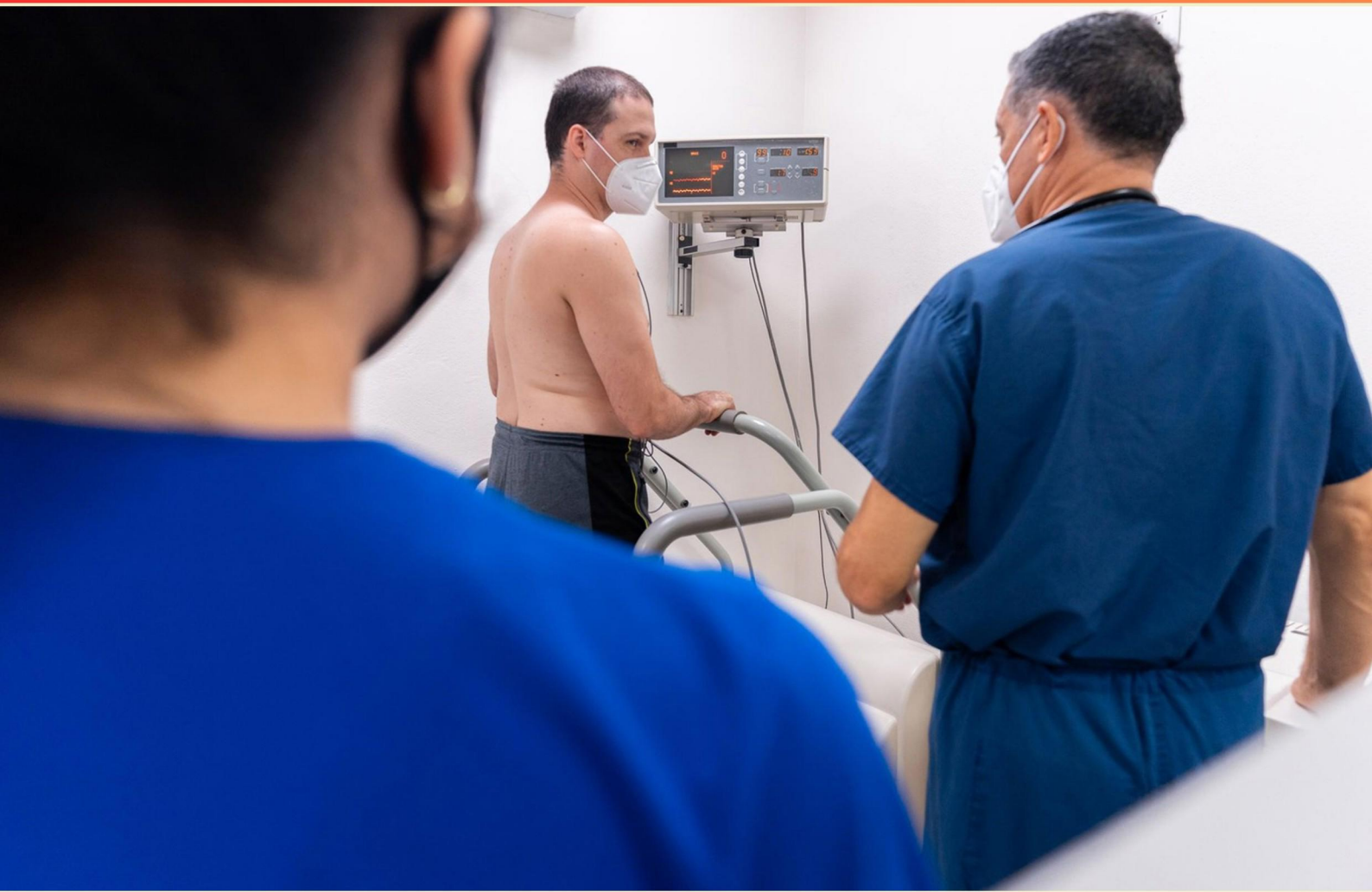


CCI CERTIFIED CARDIOGRAPHIC TECHNICIAN (CCT) PRACTICE EXAM (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR
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 leads are bipolar?**
 - A. AVR, AVL, AVF
 - B. V1-6
 - C. aVR, aVL, aVF
 - D. Leads I, II, and III
- 2. What term describes every fourth beat being a PVC?**
 - A. Trigeminy
 - B. Bigeminy
 - C. Quadrigeminy
 - D. Pentigeminy
- 3. Which heart chamber receives blood from the pulmonary veins?**
 - A. Right atrium
 - B. Right ventricle
 - C. Left atrium
 - D. Aorta
- 4. Which phase is the initial rapid depolarization?**
 - A. Phase 3 of the action potential
 - B. Phase 0 of the action potential
 - C. Phase 2 of the action potential
 - D. Phase 4 of the action potential
- 5. What should you do to verify limb lead orientation if the frontal-plane axis seems inconsistent with the clinical picture?**
 - A. Re-check limb lead placement and confirm with frontal-plane axis calculation.
 - B. Ignore and interpret based on chest leads
 - C. Only check chest leads for orientation
 - D. Call the patient for re-test
- 6. In the Bruce protocol, 5.5 mph at 20% grade corresponds to which stage?**
 - A. Stage 6
 - B. Stage 5
 - C. Stage 7
 - D. Stage 8

7. Which formula correctly calculates mean arterial pressure (MAP) from systolic (SBP) and diastolic (DBP) pressures?
- A. $(SBP + DBP) / 2$
 - B. $(SBP + 2 \cdot DBP) / 3$
 - C. $(2 \cdot SBP + DBP) / 3$
 - D. $SBP - DBP$
8. Bruce Protocol Stage 4 corresponds to which speed and grade?
- A. 5.0 mph at 18%
 - B. 4.5 mph at 16%
 - C. 5.0 mph at 20%
 - D. 4.8 mph at 16%
9. Baseline of the ECG appearing wavy due to poor electrode contact is commonly called what interference?
- A. Electrical interference
 - B. Somatic tremor
 - C. Baseline wander
 - D. Artifact drift
10. Which vessels gather blood from capillaries and channel it into veins?
- A. Arterioles
 - B. Venules
 - C. Capillaries
 - D. Arteries

Answers

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

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Explanations

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1. Which leads are bipolar?

- A. AVR, AVL, AVF
- B. V1-6
- C. aVR, aVL, aVF
- D. Leads I, II, and III**

Leads that are bipolar measure the electrical difference between two recording sites. The limb leads I, II, and III do just that by comparing different pairs of limbs: I compares the right arm and left arm, II compares the right arm and left leg, and III compares the left arm and left leg. Because each lead records the potential difference between two points, they are considered bipolar. The other leads are unipolar. Precordial chest leads V1 through V6 have a single positive electrode on the chest with a reference point derived from the Wilson central terminal, so they measure the heart's activity relative to a central reference rather than between two limbs. The augmented limb leads aVR, aVL, and aVF also use a single limb electrode as the positive input and an augmented central reference, making them unipolar as well, though with signal amplification. So the correct set of bipolar leads is the limb leads I, II, and III.

2. What term describes every fourth beat being a PVC?

- A. Trigeminy
- B. Bigeminy
- C. Quadrigeminy**
- D. Pentigeminy

The concept is how we name recurring PVC patterns based on which beat in the sequence is the ectopic beat. If a PVC occurs on every fourth beat, the cycle repeats every four heartbeats with the fourth being a PVC. This pattern is called quadrigeminy, since quadri means four. Other patterns include trigeminy (every third beat), bigeminy (every other beat), and pentigeminy (every fifth beat). So the term for every fourth beat being a PVC is quadrigeminy.

3. Which heart chamber receives blood from the pulmonary veins?

- A. Right atrium
- B. Right ventricle
- C. Left atrium**
- D. Aorta

Pulmonary veins deliver oxygen-rich blood from the lungs to the heart, and the chamber that receives this blood is the left atrium. From the left atrium, blood passes through the mitral valve into the left ventricle to be pumped to the body. (Note the exception that pulmonary veins carry oxygenated blood, unlike most veins.)

4. Which phase is the initial rapid depolarization?

- A. Phase 3 of the action potential
- B. Phase 0 of the action potential**
- C. Phase 2 of the action potential
- D. Phase 4 of the action potential

Phase 0 is the rapid upstroke of the cardiac action potential. In fast-response cardiac cells like atrial and ventricular myocytes, the resting membrane potential sits around -90 mV. When these cells are excited, fast voltage-gated sodium channels open and a large inward Na^+ current drives the membrane potential quickly from about -90 mV toward +20 mV in a very short time. This swift depolarization is what defines Phase 0. After this sharp rise, the action potential proceeds to Phase 1 (brief repolarization), Phase 2 (plateau due to calcium influx balanced by potassium efflux), Phase 3 (repolarization as potassium exits), and Phase 4 (resting potential ready for the next impulse). In nodal tissue, the upstroke can be calcium-driven, but for the typical fast fibers in exams, the initial rapid depolarization is due to sodium entry during Phase 0.

5. What should you do to verify limb lead orientation if the frontal-plane axis seems inconsistent with the clinical picture?

- A. Re-check limb lead placement and confirm with frontal-plane axis calculation.**
- B. Ignore and interpret based on chest leads
- C. Only check chest leads for orientation
- D. Call the patient for re-test

When the frontal-plane axis doesn't match what you'd expect from the patient's presentation, the first thing to check is the limb-lead setup. The limb leads largely determine the heart's axis in the frontal plane, so a misplacement or mix-up (such as swapping arms, swapping legs, or a loose connection) can produce an axis that looks off even though the heart's electrical activity is normal. Re-attaching the limb leads correctly and then recalculating the frontal-plane axis helps confirm whether the apparent deviation is technical or real. Chest leads are essential for the overall view of the ECG, especially the horizontal plane, but they don't verify limb-lead orientation. If you rely only on chest leads, you might miss a misplacement that is distorting the axis. Re-checking limb leads and recalculating the axis after correcting any issues provides a reliable basis for interpretation. If, after ensuring proper limb-lead placement, the axis still conflicts with the clinical picture, further evaluation would be warranted, but the immediate, best step is to verify limb-lead orientation.

6. In the Bruce protocol, 5.5 mph at 20% grade corresponds to which stage?

- A. Stage 6**
- B. Stage 5
- C. Stage 7
- D. Stage 8

Bruce protocol advances the treadmill in fixed 3-minute stages, increasing both speed and incline at each step. The standard sequence is: 1.7 mph at 10% grade, then 2.5 mph at 12%, 3.4 mph at 14%, 4.2 mph at 16%, 5.0 mph at 18%, 5.5 mph at 20%, 6.0 mph at 22%, and 6.6 mph at 24%. Therefore, 5.5 mph at 20% grade corresponds to Stage six.

7. Which formula correctly calculates mean arterial pressure (MAP) from systolic (SBP) and diastolic (DBP) pressures?

- A. $(SBP + DBP) / 2$
- B. $(SBP + 2 \times DBP) / 3$**
- C. $(2 \times SBP + DBP) / 3$
- D. $SBP - DBP$

Mean arterial pressure represents the average pressure in the arteries over a full cardiac cycle, and because the heart spends more time in diastole, the diastolic pressure has greater influence on that average. The common clinical approximation weights diastole more, giving MAP as $(SBP + 2 \times DBP) \div 3$. This is the same as DBP plus one-third of the pulse pressure (pulse pressure being $SBP - DBP$). The option that uses this weighting matches how MAP is typically estimated in practice. The simple average of SBP and DBP treats the two phases as equal time and would misrepresent the true average since diastole lasts longer. Using twice SBP plus DBP over three overemphasizes systole, and subtracting DBP yields pulse pressure, not a mean arterial pressure.

8. Bruce Protocol Stage 4 corresponds to which speed and grade?

- A. 5.0 mph at 18%**
- B. 4.5 mph at 16%
- C. 5.0 mph at 20%
- D. 4.8 mph at 16%

Stage progression in the Bruce treadmill protocol increases both speed and incline in each stage, creating a progressively heavier workload. The combination that defines Stage 4 in this protocol is 5.0 mph at an 18% grade. This pairing reflects the expected mid-to-late-stage workload the protocol assigns for that point in the test. The other options don't match the established stage values: they either reflect earlier workload (lower speed or lower incline), or a higher incline with the same or greater speed that would place you at a later stage. So the 5.0 mph at 18% grade pairing best fits Stage 4.

9. Baseline of the ECG appearing wavy due to poor electrode contact is commonly called what interference?

- A. Electrical interference**
- B. Somatic tremor
- C. Baseline wander
- D. Artifact drift

Baseline wander comes from unstable electrode contact. When skin prep is inadequate, gel dries, or a lead is loose, the impedance between the skin and electrode changes as the patient breathes or moves. Those slow, drifting changes in electrode impedance pull the isoelectric line up and down, so the baseline appears wavy or wandering across the tracing. This is typical of poor contact and can be mitigated by cleaning the skin, lightly abrading if needed, reapplying fresh electrodes, and ensuring leads are securely connected. Electrical interference would show as a regular high-frequency noise (a thin, consistent 60 Hz or 50 Hz line), not a slow, drifting baseline. Somatic tremor produces irregular, rapid spikes from muscle activity. Artifact drift isn't the usual term for this scenario.

10. Which vessels gather blood from capillaries and channel it into veins?

- A. Arterioles
- B. Venules**
- C. Capillaries
- D. Arteries

Blood that has passed through capillary beds is collected by small vessels called venules, which funnel it into veins heading back toward the heart. This fits the flow of the microcirculation: arteries deliver blood to tissues via arterioles, capillaries exchange substances with tissues, and then blood is gathered by venules before entering veins. Arteries carry blood away from the heart, arterioles feed the capillaries, and capillaries are the exchange sites themselves. Since venules are the vessels that collect from capillaries and channel into veins, they are the correct answer.

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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://ccicct.examzify.com>

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

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