

BASIC ARRHYTHMIAS WITH 12 LEAD EKG'S PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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THE FULL VERSION STUDY GUIDE**

<https://basicarrhythmias12leadekg.examzify.com>



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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 axis represents the overall direction of ventricular depolarization?**
 - A. Mean QRS axis
 - B. P wave axis
 - C. T axis
 - D. QRS axis
- 2. The two lower chambers are called the**
 - A. ventricles
 - B. atria
 - C. valves
 - D. septum
- 3. Which rhythm is an accelerated junctional rhythm, indicating an irritable junction overriding the normal pacemaker and typically associated with AMI, open heart surgery, myocarditis, or digoxin toxicity?**
 - A. Junctional Tachycardia
 - B. Accelerated Junctional Rhythm
 - C. First Degree Heart Block
 - D. Atrial Tachycardia
- 4. Which description best matches a typical right bundle branch block on ECG?**
 - A. Wide QRS with rsR' pattern in V1 and broad S waves in I and V6
 - B. Wide QRS with an rs pattern in V1
 - C. Narrow QRS with deep S in V1
 - D. Wide QRS with rsR' pattern in V1 and broad S waves in I and V6
- 5. Which statement best describes the directional view provided by a standard 12-lead ECG?**
 - A. Twelve directions
 - B. Six directions
 - C. Three directions
 - D. One direction

- 6. In ventricular tachycardia, what is commonly observed about P waves?**
- A. Often no clear P waves.
 - B. P waves are always visible and precede QRS.
 - C. P waves occur after QRS at fixed intervals.
 - D. P waves inverted in all leads.
- 7. What does a short PR interval with a delta wave indicate on ECG?**
- A. Wolff-Parkinson-White pattern with pre-excitation
 - B. Left bundle branch block
 - C. Inferior STEMI
 - D. Posterior MI
- 8. In the first phase of a cardiac cycle the atria are at rest, allowing blood to pour in from the body and lungs. This phase is called ____ _____. As the pressure rises, the tricuspid & bicuspid (mitral) valves open to allow blood to pass into the relaxed ventricles**
- A. Atrial Diastole
 - B. Atrial Systole
 - C. Ventricular Diastole
 - D. Ventricular Systole
- 9. What defines third-degree AV block on ECG?**
- A. Atria and ventricles beat independently; P-P and R-R intervals regular; no AV conduction; QRS may be wide if escape rhythm below the AV node.
 - B. AV block with occasional conducted beats and variable PR.
 - C. Only P waves present with no QRS.
 - D. Very fast ventricular rate with regular P waves.
- 10. Which of the following statements about the QT interval in hypocalcemia is correct?**
- A. Shortened QT interval
 - B. QT interval unchanged
 - C. ST depression
 - D. Prolonged QT interval

Answers

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

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Explanations

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1. Which axis represents the overall direction of ventricular depolarization?

A. Mean QRS axis

B. P wave axis

C. T axis

D. QRS axis

The overall direction of ventricular depolarization is captured by the mean QRS axis—the average orientation of the QRS vectors across the heart. Think of the ventricles depolarizing as a vector moving through the myocardium; the mean QRS axis is that net direction, not tied to any single lead but to the sum of all QRS activity. The P wave axis, by contrast, reflects atrial depolarization, while the T axis reflects ventricular repolarization. So the axis that best represents how the ventricles depolarize as a whole is the mean QRS axis (often simply called the QRS axis).

2. The two lower chambers are called the

A. ventricles

B. atria

C. valves

D. septum

The two lower chambers are the ventricles. In the heart, the upper chambers are called atria and receive blood, while the lower chambers are ventricles and pump blood out. The right ventricle pushes blood to the lungs, and the left ventricle pumps blood to the rest of the body, which is why the ventricles have thicker walls and generate higher pressure. The other terms refer to different parts: atria are the upper chambers, valves are the flaps that regulate blood flow, and the septum is the wall that divides the left and right sides.

3. Which rhythm is an accelerated junctional rhythm, indicating an irritable junction overriding the normal pacemaker and typically associated with AMI, open heart surgery, myocarditis, or digoxin toxicity?

A. Junctional Tachycardia

B. Accelerated Junctional Rhythm

C. First Degree Heart Block

D. Atrial Tachycardia

Accelerated junctional rhythm occurs when the AV junction becomes the dominant pacemaker and fires more rapidly than the SA node, but not fast enough to be called tachycardia. The impulse travels to the ventricles through a narrow QRS, and atrial activity may be hidden or appear retrogradely (P waves after or inverted with respect to the QRS). The typical rate is about 60–100 beats per minute. This pattern fits the described scenario because it reflects a irritable junction overriding the normal pacemaker, and it is classically seen in settings like myocardial infarction, recent open heart surgery, myocarditis, or digoxin toxicity. It's distinct from junctional tachycardia (which is faster than 100 bpm), first degree heart block (characterized by a prolonged PR interval with a normal rate), and atrial tachycardia (originates in the atria with different P wave morphology and usually a higher rate).

4. Which description best matches a typical right bundle branch block on ECG?

- A. Wide QRS with rsR' pattern in V1 and broad S waves in I and V6
- B. Wide QRS with an rs pattern in V1
- C. Narrow QRS with deep S in V1
- D. Wide QRS with rsR' pattern in V1 and broad S waves in I and V6**

Recognizing the classic ECG features of a right bundle branch block. When the right bundle is blocked, the right ventricle activates later than the left, so the overall depolarization takes longer and the QRS becomes wide (>120 ms). In the V1 lead you typically see an rsR' morphology, meaning a small initial R wave followed by a taller second R'—an M-shaped pattern reflecting late right ventricular activation. In the lateral leads (I and V6), the delayed right ventricular activation produces broadened, terminal S waves. So the description that fits best is a wide QRS with an rsR' pattern in V1 and broad S waves in I and V6. The other options don't capture both the rsR' in V1 and the broad S waves in the lateral leads, or they describe patterns (like a narrow QRS) not consistent with RBBB, or omit the key R' feature.

5. Which statement best describes the directional view provided by a standard 12-lead ECG?

- A. Twelve directions**
- B. Six directions
- C. Three directions
- D. One direction

Think of a standard 12-lead ECG as offering a suite of viewing angles of the heart's electrical activity. The six limb leads view the heart in the frontal plane from different directions around the body, while the six precordial (chest) leads project from the chest toward the heart, adding six more angles in the horizontal plane. Taken together, there are twelve distinct directional views. This collection of viewpoints lets you see electrical activity from multiple regions of the heart, which is why the description that it provides twelve directions is the best fit. Fewer directions would miss important perspectives captured by other leads, and only one direction would be insufficient to assess regional differences.

6. In ventricular tachycardia, what is commonly observed about P waves?

- A. Often no clear P waves.**
- B. P waves are always visible and precede QRS.
- C. P waves occur after QRS at fixed intervals.
- D. P waves inverted in all leads.

In ventricular tachycardia the rhythm is driven by the ventricles, not the atria. This ventricular origin often leads to AV dissociation, where the atrial and ventricular rhythms run independently. Because of this dissociation and the rapid, wide QRS complexes, the atrial signal (P waves) is frequently obscured or does not occur in a clear, fixed relationship to the QRS. As a result, P waves are often not clearly visible on the tracing. If P waves do appear, they typically do not precede the QRS in a consistent, orderly way, and they may even occur after the QRS at irregular or indeterminate intervals, reflecting the lack of a stable atrioventricular connection during VT. This makes the observation of clearly visible P waves uncommon in VT. The other statements would suggest a different rhythm mechanism. P waves preceding QRS implies normal AV conduction with a supraventricular origin, which isn't the defining feature of VT. P waves after QRS at fixed intervals could imply a specific retrograde conduction pattern, not the usual VT pattern. P waves inverted in all leads isn't a reliable hallmark of VT either.

7. What does a short PR interval with a delta wave indicate on ECG?

- A. Wolff-Parkinson-White pattern with pre-excitation**
- B. Left bundle branch block
- C. Inferior STEMI
- D. Posterior MI

A short PR interval with a delta wave points to pre-excitation of the ventricles via an accessory pathway, as seen in Wolff-Parkinson-White syndrome. The PR interval is shortened because the atrial impulse bypasses the AV node and reaches the ventricles earlier through this accessory tract. The delta wave is a slurred, initial upstroke of the QRS representing early ventricular activation starting at the accessory pathway before the normal His-Purkinje system takes over. This early activation broadens the overall QRS complex, producing the widened QRS with a notchless, slurred start. In contrast, a pattern consistent with left bundle branch block shows a wide QRS with characteristic BBB morphology but no delta wave; inferior STEMI would show ST elevations in the inferior leads; posterior MI presents with reciprocal changes in the anterior leads, not a delta wave.

8. In the first phase of a cardiac cycle the atria are at rest, allowing blood to pour in from the body and lungs. This phase is called ____ _____. As the pressure rises, the tricuspid & bicuspid (mitral) valves open to allow blood to pass into the relaxed ventricles

- A. Atrial Diastole**
- B. Atrial Systole
- C. Ventricular Diastole
- D. Ventricular Systole

The phase described is atrial diastole. During this time the atria are relaxed and filling from the venous return (blood coming from the body and lungs). As atrial pressure rises, it becomes greater than the ventricular pressure, causing the tricuspid and mitral valves to open so blood can flow passively into the relaxed ventricles. This is the period of ventricular filling that occurs before atrial contraction. The alternative would be atrial systole, when the atria actively contract to push any remaining blood into the ventricles, but the scenario given fits atrial diastole.

9. What defines third-degree AV block on ECG?

- A. Atria and ventricles beat independently; P-P and R-R intervals regular; no AV conduction; QRS may be wide if escape rhythm below the AV node.**
- B. AV block with occasional conducted beats and variable PR.
- C. Only P waves present with no QRS.
- D. Very fast ventricular rate with regular P waves.

Third-degree AV block is complete AV dissociation: the atrial impulses and ventricular impulses beat independently because no signal gets through the AV node or below. On the ECG you'll see P waves marching at a steady rate and QRS complexes marching at their own steady rate, with a fixed P-P interval and a fixed R-R interval but no fixed relationship between a P wave and the following QRS. That lack of AV conduction means the ventricles must rely on an escape rhythm below the block, which explains the QRS appearance: if the escape focus is near the AV node or in the His bundle, the QRS is narrow; if the escape rhythm is below the AV node (in the ventricles), the QRS is wide. Ventricular rates in complete block are typically slow, reflecting the escape rhythm pace.

10. Which of the following statements about the QT interval in hypocalcemia is correct?

- A. Shortened QT interval
- B. QT interval unchanged
- C. ST depression
- D. Prolonged QT interval**

Hypocalcemia prolongs ventricular repolarization, which shows up as a longer QT interval on the ECG. Calcium helps the plateau phase of the cardiac action potential; when calcium is low, repolarization takes longer, extending the QT from the start of the QRS to the end of the T wave. That's why the statement describing a prolonged QT interval is correct. Smaller clues help solidify the concept: hypercalcemia shortens the QT interval, so a shortened QT would not fit hypocalcemia. QT interval being unchanged isn't consistent with the slowed repolarization caused by low calcium, and ST depression isn't the characteristic feature of hypocalcemia. Prolonged QT can raise the risk of dangerous arrhythmias like torsades de pointes, especially with other predisposing factors.

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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:

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

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