

# Basic Arrhythmias With 12 Lead EKG's 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

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- 1. Which rhythm can precede blocks or Asystole?**
  - A. Premature Atrial Complex**
  - B. Normal Sinus Rhythm**
  - C. Atrial Flutter**
  - D. Junctional Rhythm**
  
- 2. Current flowing toward a positive electrode on an ECG trace produces which type of deflection?**
  - A. Upright deflection**
  - B. Inverted deflection**
  - C. Isoelectric line**
  - D. Downward deflection**
  
- 3. The two upper chambers of the heart are called the**
  - A. atria**
  - B. ventricles**
  - C. valves**
  - D. septum**
  
- 4. The heart is roughly the size of a**
  - A. Fist**
  - B. Foot**
  - C. Palm**
  - D. Coin**
  
- 5. Third Degree Heart Block (Complete Heart Block) is typically characterized by which combination of features?**
  - A. Very slow rate and an abnormal pacemaker site**
  - B. Rapid rate with narrow QRS**
  - C. Normal rate and normal conduction**
  - D. Frequent PACs**

- 6. The opposing electrode is created by combining other electrodes into a \_\_\_\_\_, an electrically neutral point to reference the center of the heart.**
- A. Central terminal leads**
  - B. Unipolar leads**
  - C. Monitoring leads**
  - D. Precordial leads**
- 7. The normal heartbeat triggered by the SA node is termed the**
- A. Sinus rhythm**
  - B. Atrial fibrillation**
  - C. Ventricular tachycardia**
  - D. Junctional rhythm**
- 8. Which ventricle has the larger muscle mass and thus contributes a stronger depolarization vector?**
- A. Left ventricle**
  - B. Right ventricle**
  - C. Atria**
  - D. Interventricular septum**
- 9. What term describes manifestations of electrical activity in the heart that cause problems when the rhythm breaks down?**
- A. Arrhythmias**
  - B. Myocardial infarction**
  - C. Hypertension**
  - D. Aneurysm**
- 10. Which muscles open and close the valves that prevent backflow?**
- A. Papillary Muscles**
  - B. Pectinate Muscles**
  - C. Purkinje Fibers**
  - D. Myocardial Fibers**

## Answers

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

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## **Explanations**

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## 1. Which rhythm can precede blocks or Asystole?

**A. Premature Atrial Complex**

**B. Normal Sinus Rhythm**

**C. Atrial Flutter**

**D. Junctional Rhythm**

Premature atrial complexes are early atrial impulses that can arrive at the AV node when it is in a relative refractory period. If the premature beat is not conducted to the ventricles, you get a non-conducted PAC and a compensatory pause. That pause can be long enough to look like a block or even a moment of no ventricular activity (asystole) until the next conducted beat occurs. So this rhythm can precede episodes of conduction block or temporary asystole on an EKG tracing. Normal sinus rhythm wouldn't set up a block or asystole in advance; atrial flutter has a rapid atrial rate with variable conduction and isn't described as preceding blocks or asystole in the same way; a junctional rhythm originates from the AV node and typically presents with a slower rate and different P-wave morphology, not as a precursor to blocks or asystole.

## 2. Current flowing toward a positive electrode on an ECG trace produces which type of deflection?

**A. Upright deflection**

**B. Inverted deflection**

**C. Isoelectric line**

**D. Downward deflection**

The direction of the heart's electrical wave relative to the lead's positive electrode determines the sign of the deflection. When the depolarization vector moves toward the positive electrode, the tracing shows a positive, upright deflection. If the wave moves away, you'd see a negative (inverted) deflection, and if it's perpendicular to the lead, the deflection can be small or isoelectric. So, current toward the positive electrode results in an upright deflection.

## 3. The two upper chambers of the heart are called the

**A. atria**

**B. ventricles**

**C. valves**

**D. septum**

The two upper chambers are the atria. They act as receiving rooms for blood returning to the heart. The right atrium collects deoxygenated blood from the body via the superior and inferior vena cavae (and the coronary sinus), while the left atrium collects oxygenated blood from the lungs via the pulmonary veins. When the atria contract, they push blood into the ventricles through the atrioventricular valves—the tricuspid valve on the right and the mitral valve on the left. The atria have thinner walls because they only need to move blood a short distance to fill the ventricles.

#### 4. The heart is roughly the size of a

- A. Fist**
- B. Foot**
- C. Palm**
- D. Coin**

A basic way we gauge heart size is by comparing it to a clenched fist. In an average adult, the heart weighs about 250 to 350 grams and is roughly 12 cm long, 8-9 cm wide, and about 6 cm thick, which fits inside the chest in the shape of a fist. That makes the closed fist a good mental reference for the heart's size. Among the options, a closed fist best matches the actual size. A foot is far larger, a palm is typically smaller than a clenched fist and would underestimate the heart, and a coin is much smaller than the heart.

#### 5. Third Degree Heart Block (Complete Heart Block) is typically characterized by which combination of features?

- A. Very slow rate and an abnormal pacemaker site**
- B. Rapid rate with narrow QRS**
- C. Normal rate and normal conduction**
- D. Frequent PACs**

Third-degree heart block means complete AV dissociation: the atria keep beating at their normal rate, but no impulses reach the ventricles. The ventricles then follow an escape rhythm from a slower, abnormal pacemaker below the block (either a junctional or ventricular focus). This combination produces a very slow ventricular rate because the ventricular rhythm isn't coming from the usual conduction system. The pacemaker site is abnormal because the ventricles are driven by an ectopic focus below the block rather than by the SA node through the AV node. This differs from a rapid rate with a narrow QRS (a supraventricular tachycardia with preserved conduction), normal rate with normal conduction (no block), or frequent PACs (premature atrial beats) which don't create complete AV dissociation.

#### 6. The opposing electrode is created by combining other electrodes into a \_\_\_\_, an electrically neutral point to reference the center of the heart.

- A. Central terminal leads**
- B. Unipolar leads**
- C. Monitoring leads**
- D. Precordial leads**

In unipolar ECG leads, one electrode measures the heart's electrical activity while the other side uses a reference point that is electrically neutral and closest to the center of the heart. This neutral reference is Wilson's central terminal, created by combining the potentials from the three limb electrodes (right arm, left arm, left leg) through a resistor network. This summed point serves as a stable reference for the center of the heart, so the chest leads (and the augmented limb leads) can measure the true directional activity of the heart against a neutral background. That's why this term fits best: it specifically describes the neutral reference point formed from other electrodes. The other options describe lead types or locations but do not name the neutral reference point used for unipolar measurements.

**7. The normal heartbeat triggered by the SA node is termed the**

- A. Sinus rhythm**
- B. Atrial fibrillation**
- C. Ventricular tachycardia**
- D. Junctional rhythm**

The key idea is that normal rhythm is driven by the sinoatrial (SA) node, producing a sinus rhythm when the impulse travels in a normal sequence from atria to ventricles. On an ECG, sinus rhythm means a P wave precedes every QRS complex with the same shape, a constant PR interval (about 0.12-0.20 seconds), a regular rhythm, and a heart rate in the normal range (roughly 60-100 beats per minute). The QRS complex is narrow because the ventricle depolarizes through the normal His-Purkinje pathway. This distinguishes it from atrial fibrillation, where there are no distinct P waves and the rhythm is irregularly irregular with variable R-R intervals. It also differs from ventricular tachycardia, which presents as a rapid, wide-complex rhythm often with no organized atrial activity, and from junctional rhythm, which arises from the AV junction and may show absent or retrograde P waves with a slower rate. Therefore, the description that matches these features points to sinus rhythm as the normal heartbeat triggered by the SA node.

**8. Which ventricle has the larger muscle mass and thus contributes a stronger depolarization vector?**

- A. Left ventricle**
- B. Right ventricle**
- C. Atria**
- D. Interventricular septum**

The main idea is that the size of a chamber's muscle mass directly influences the strength of its depolarization vector. The left ventricle has the thickest myocardium because it must generate high pressure to pump blood into the systemic circulation. That greater mass produces a larger electrical force during depolarization, so the net vector is strongest in the direction of the left ventricle. This dominance shapes the QRS complex, with larger amplitudes in the left-sided leads and a overall axis pointing leftward and slightly downward. The right ventricle, being thinner, generates a smaller depolarization vector and thus contributes less to the net QRS vector. The atria depolarize earlier and their vectors are much smaller in magnitude compared with the ventricles, and the septum—while it does contribute to early depolarization—adds a smaller component than the whole left ventricle. So the left ventricle's mass makes it the primary determinant of the overall depolarization vector.

**9. What term describes manifestations of electrical activity in the heart that cause problems when the rhythm breaks down?**

- A. Arrhythmias**
- B. Myocardial infarction**
- C. Hypertension**
- D. Aneurysm**

The focus here is on abnormalities in the heart's electrical activity that disrupt the rhythm. When the normal electrical timing breaks down, the heart may beat too fast, too slow, or with an irregular pattern—that set of problems is called arrhythmias. Arrhythmias arise from issues in the conduction system (like the SA node, AV node, or Purkinje fibers) or from ectopic electrical foci, and they can range from harmless skipped beats to lifethreatening rhythms that impair cardiac output. On a 12-lead ECG, they show up as abnormal rhythm patterns, altered rates, or irregular intervals. The other terms describe structural or vascular problems rather than electrical rhythm disturbances: myocardial infarction is damage from ischemia to heart muscle, hypertension is high blood pressure, and an aneurysm is a bulge in a vessel or heart chamber. Because those describe anatomy or pathology outside the electrical rhythm, they don't fit as well as arrhythmias.

**10. Which muscles open and close the valves that prevent backflow?**

- A. Papillary Muscles**
- B. Pectinate Muscles**
- C. Purkinje Fibers**
- D. Myocardial Fibers**

Papillary muscles are responsible for opening and closing the valves that prevent backflow. They attach to the valve leaflets (mitral and tricuspid) via the chordae tendineae. When the ventricles contract, the papillary muscles also contract, pulling on the chordae to tense the leaflets so they stay closed and don't prolapse into the atria. This prevents regurgitation during systole. The other options don't perform this valve-tensing role: pectinate muscles help atrial contraction, Purkinje fibers coordinate electrical timing, and general myocardial fibers are the muscle tissue that contracts but don't specifically control valve closure.

## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://basicarrhythmias12leadekg.examzify.com>**

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

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