

Certified EKG technician (CET) Practice Exam (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. What is the function of the ectopic pacemaker?

- A. To synchronize heart contractions**
- B. To initiate impulses outside of the SA node**
- C. To reduce heart rate during exercise**
- D. To regulate blood flow through the heart**

2. What might an EKG show in a patient with COPD?

- A. Left axis deviation**
- B. Normal sinus rhythm**
- C. Signs of right axis deviation**
- D. Prolonged QT interval**

3. What does atrial fibrillation look like on an EKG?

- A. A regular rhythm with distinct P waves**
- B. An irregularly irregular rhythm and absent P waves**
- C. A rapid heartbeat with wide QRS complexes**
- D. A smooth and consistent waveform**

4. How is atrial depolarization represented on an EKG?

- A. QRS complex**
- B. P wave**
- C. T wave**
- D. Digitized output**

5. What does a pulse oximetry reading of 88% indicate?

- A. Normal oxygen saturation**
- B. Hypoxemia**
- C. Hyperoxia**
- D. Severe respiratory distress**

6. Which method should an EKG technician use to calculate a patient's heart rate from the EKG tracing?

- A. Count the number of R waves in 10 seconds and multiply by 6**
- B. Count the number of small boxes between two R waves**
- C. Multiply the total number of QRS complexes by 10**
- D. Divide 300 by the number of large boxes between two R waves**

7. In a posterior 12-lead EKG placement, which leads should be positioned along the paraspinous border?

- A. Leads V7 and V8**
- B. Leads V9 and V6**
- C. Leads V1 and V2**
- D. Leads V3 and V4**

8. What is the most common cause of artifacts in an EKG tracing?

- A. Patient movement**
- B. Electrode displacement**
- C. Electrical interference**
- D. Incorrect lead placement**

9. When applying electrodes for telemetry, where should the ground electrode be placed?

- A. On the left arm**
- B. On the left leg**
- C. On the right arm**
- D. On the right lower leg**

10. Where should an EKG technician place the electrodes for leads V7, V8, and V9?

- A. On the anterior chest**
- B. Evenly spaced on the back between the axillary line and the vertebral column**
- C. On the left arm**
- D. Centered on the abdomen**

Answers

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

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Explanations

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1. What is the function of the ectopic pacemaker?

- A. To synchronize heart contractions
- B. To initiate impulses outside of the SA node**
- C. To reduce heart rate during exercise
- D. To regulate blood flow through the heart

The function of the ectopic pacemaker is primarily to initiate impulses outside of the sinoatrial (SA) node. The SA node is the heart's natural pacemaker, responsible for setting the rhythm of the heart's contractions. However, there are times when this normal conduction pathway is disrupted due to various conditions. In such cases, ectopic pacemakers can emerge, which are abnormal pacemaker sites in the heart that take over and generate electrical impulses, contributing to heartbeats. This phenomenon occurs when the SA node is either not functioning properly or is overridden, allowing these ectopic areas—often located in the atria, ventricles, or the junction of the atria and ventricles—to generate impulses. This can lead to arrhythmias or irregular heart rhythms, as the impulses may not be well-coordinated, often leading to rapid heart rates or ineffective contractions. In contrast, functions like synchronizing heart contractions or regulating blood flow through the heart relate to the coordinated activity of the heart's conduction system, which includes the proper functioning of the SA node and the atrioventricular (AV) node, rather than ectopic pacemaker activity. Additionally, while the heart rate may vary due to exercise, the ectopic pacemaker's role

2. What might an EKG show in a patient with COPD?

- A. Left axis deviation
- B. Normal sinus rhythm
- C. Signs of right axis deviation**
- D. Prolonged QT interval

In a patient with Chronic Obstructive Pulmonary Disease (COPD), it is common to see signs of right axis deviation on an EKG. This phenomenon occurs due to the changes in the heart's structure and function that are often associated with COPD. As the lung tissue becomes damaged, it can lead to hypoxia (low oxygen levels) and increased pressure in the pulmonary circulation, resulting in right ventricular hypertrophy as the right side of the heart works harder to pump blood through the lungs. This adaptive change can manifest as a shift of the electrical axis of the heart to the right, which is referred to as right axis deviation. The EKG gives a visual representation of the heart's electrical activity, and alterations like this can often signal underlying pulmonary or cardiovascular conditions, such as emphysema or chronic bronchitis, both of which are forms of COPD. While normal sinus rhythm and prolonged QT intervals can be detected in some instances, they do not specifically indicate the cardiovascular effects related to COPD as prominently as the right axis deviation does. Left axis deviation is typically not associated with COPD; it is more often linked to conditions such as left ventricular hypertrophy or myocardial infarction. Therefore, right axis deviation is a hallmark finding on an EKG for patients

3. What does atrial fibrillation look like on an EKG?

- A. A regular rhythm with distinct P waves
- B. An irregularly irregular rhythm and absent P waves**
- C. A rapid heartbeat with wide QRS complexes
- D. A smooth and consistent waveform

Atrial fibrillation is characterized by an irregularly irregular rhythm on the electrocardiogram (EKG). This means that the intervals between successive beats are inconsistent, resulting in a chaotic appearance of the heart rhythm. One of the hallmark features of atrial fibrillation is the absence of distinct P waves. Instead of the regular P wave seen in normal sinus rhythm, the EKG during atrial fibrillation shows a baseline that appears erratic, reflecting the disorganized electrical activity in the atria. This erratic behavior leads to irregular spacing of the QRS complexes, which are the main indicators of ventricular contractions. The lack of clear P waves and the irregularity of the rhythm are key identifiers for healthcare professionals when diagnosing atrial fibrillation on an EKG strip. Recognizing these patterns is crucial for appropriate clinical management of patients with this condition.

4. How is atrial depolarization represented on an EKG?

- A. QRS complex
- B. P wave**
- C. T wave
- D. Digitized output

Atrial depolarization is represented on an EKG by the P wave. This wave corresponds specifically to the electrical activity associated with the contraction of the atria, the two upper chambers of the heart. During atrial depolarization, the heart's action potential stimulates the atrial musculature, leading to muscle contraction. This electrical activity generates a wave that is visualized as the P wave on the EKG graph. The P wave typically appears as a small, upward deflection before the larger QRS complex. Understanding that each component of the EKG waveforms represents specific electrical activities within the heart is crucial for interpreting EKGs. The QRS complex represents ventricular depolarization, while the T wave signifies ventricular repolarization. The term "digitized output" does not refer to specific electrical events in the heart, but rather how EKG data may be processed or displayed. Therefore, the P wave is the correct representation of atrial depolarization on an EKG.

5. What does a pulse oximetry reading of 88% indicate?

- A. Normal oxygen saturation
- B. Hypoxemia**
- C. Hyperoxia
- D. Severe respiratory distress

A pulse oximetry reading of 88% indicates hypoxemia, which refers to a lower-than-normal level of oxygen in the blood. Normal oxygen saturation typically ranges from 95% to 100%, so a reading of 88% suggests that the body's tissues may not be receiving adequate oxygen, which can lead to various health issues. Hypoxemia can result from several conditions, including respiratory disorders, cardiovascular issues, or environmental factors such as high altitude. It is crucial to recognize hypoxemia because it often requires immediate medical attention to address the underlying cause and restore appropriate oxygen levels in the bloodstream. While other conditions mentioned, like severe respiratory distress, can relate to low oxygen saturation, the specific measurement of 88% most directly correlates with hypoxemia rather than being classified as normal saturation, hyperoxia (excess oxygen), or severe respiratory distress on their own.

6. Which method should an EKG technician use to calculate a patient's heart rate from the EKG tracing?

- A. Count the number of R waves in 10 seconds and multiply by 6
- B. Count the number of small boxes between two R waves
- C. Multiply the total number of QRS complexes by 10
- D. Divide 300 by the number of large boxes between two R waves**

The method of dividing 300 by the number of large boxes between two R waves is a well-established technique for calculating heart rate from an EKG tracing. This approach is based on the standard EKG paper speed, which is 25 mm per second. Since each large box on the EKG paper represents 0.2 seconds (5 small boxes per large box), dividing 300 by the number of large boxes gives a direct calculation of how many beats per minute (BPM) correspond to the heart rhythm observed. For example, if there are 3 large boxes between two R waves, you would perform the calculation: $300 \div 3 = 100$ BPM. This method is fast and reliable, especially for regular rhythms, making it a preferred technique among EKG technicians. Counting the number of R waves in 10 seconds and multiplying by 6 can yield an accurate heart rate but requires an overall analysis over a set timeframe rather than directly assessing the spaces on the tracing. Counting the number of small boxes between R waves is useful for determining the heart rate using a different formula, but it is less direct than the method of dividing 300 by large boxes. Multiplying the total number of QRS complexes by 10 does not provide

7. In a posterior 12-lead EKG placement, which leads should be positioned along the paraspinous border?

- A. Leads V7 and V8**
- B. Leads V9 and V6**
- C. Leads V1 and V2**
- D. Leads V3 and V4**

In a posterior 12-lead EKG placement, the correct leads to position along the paraspinous border are V7 and V8. This placement is specifically designed to assess the electrical activity of the heart from the posterior aspect, which can be particularly important in diagnosing conditions like posterior myocardial infarctions. Placing V7 and V8 along the paraspinous border allows for the optimal recording of the electrical signals from the posterior wall of the heart. V7 is typically located in the left posterior axillary line, while V8 is placed on the left scapular line, both of which provide crucial information about the posterior cardiac region. The other lead configurations do not correspond to this specific location for assessing the posterior heart area. For instance, leads V1 and V2 are primarily placed in the anterior region of the chest to capture activity from the right ventricle and the interventricular septum. Similarly, V3 and V4 are positioned over the anterior wall of the heart, and V9 is typically used as an additional posterior lead on the right side, not along the paraspinous border. Thus, the placement of leads V7 and V8 is essential and aligned correctly in this scenario.

8. What is the most common cause of artifacts in an EKG tracing?

- A. Patient movement**
- B. Electrode displacement**
- C. Electrical interference**
- D. Incorrect lead placement**

Patient movement is considered the most common cause of artifacts in an EKG tracing. When a patient shifts, moves, or tenses during the recording, it can create extra signals on the EKG that do not reflect the heart's activity. This results in jagged lines or irregular patterns on the tracing, which can complicate the interpretation of the EKG. The identification of these artifacts is crucial because they can easily mimic arrhythmias or other cardiac issues, leading to misinterpretation. By ensuring patients remain as still as possible during EKG procedures, technicians can reduce the likelihood of these movement-related artifacts, thereby improving the accuracy of the readings. Other factors like electrode displacement, electrical interference, and incorrect lead placement can also introduce artifacts, but patient movement tends to be more prevalent due to the natural behaviors of individuals during the test.

9. When applying electrodes for telemetry, where should the ground electrode be placed?

- A. On the left arm**
- B. On the left leg**
- C. On the right arm**
- D. On the right lower leg**

The ground electrode in telemetry is essential for minimizing electrical noise and ensuring the accuracy of the EKG readings. Placing the ground electrode on the right lower leg helps reduce interference from other electrical signals in the body. This placement is strategic as it utilizes a location that is farther from the heart and muscle activity, which can create electrical noise. In telemetry, it is critical for the ground electrode to be located in an area that provides a stable reference point for the heart's electrical activity. The right lower leg is an effective site for this purpose. It helps create a baseline and enhances the quality of the signal transmitted to the monitoring equipment, leading to clearer interpretations of cardiac rhythms. Other locations, such as the arms or legs, might not provide as effective a grounding point and could introduce more noise into the readings. Therefore, placing the ground electrode on the right lower leg is considered best practice to ensure optimal telemetry results.

10. Where should an EKG technician place the electrodes for leads V7, V8, and V9?

- A. On the anterior chest**
- B. Evenly spaced on the back between the axillary line and the vertebral column**
- C. On the left arm**
- D. Centered on the abdomen**

For leads V7, V8, and V9, the electrodes are placed on the back, which is why the correct response emphasizes the positioning between the axillary line and the vertebral column. These leads are specifically used to gain additional views of the heart, particularly the left lateral wall, which is important in assessing certain cardiac conditions, such as those involving the left side of the heart. Placing the electrodes in this manner ensures that they are positioned accurately for optimal readings. They provide valuable information in conjunction with the standard 12-lead EKG setup. The space between the axillary line and the vertebral column is critical for ensuring that the readings reflect the electrical activity of the heart from the appropriate angles needed for an accurate analysis. In contrast, placing electrodes on the anterior chest, on the left arm, or centered on the abdomen would not provide the correct views needed for leads V7, V8, and V9. Such placements could result in misleading data, making it imperative that technicians understand the specific anatomical locations for each lead.

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://cet.examzify.com>

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

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