

Certified EkG technician (CET) Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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SAMPLE

Questions

SAMPLE

- 1. How can excessive potassium affect EKG readings?**
 - A. It decreases heart rate**
 - B. It causes a prolonged PR interval**
 - C. It can lead to widening of QRS complex**
 - D. It has no effect on the EKG**
- 2. What effect does digoxin have on the EKG?**
 - A. It causes a wide QRS complex**
 - B. It leads to shorter PR intervals**
 - C. It results in a characteristic "scooped" ST segment**
 - D. It decreases heart rate significantly**
- 3. What should a technician monitor for signs of ischemia during an EKG?**
 - A. Increased heart rate**
 - B. Changes in ST segments**
 - C. Decreased blood pressure**
 - D. Decreased respiratory rate**
- 4. What term should a technician use to document when the pulse rhythm is not regular?**
 - A. Weak**
 - B. Irregular**
 - C. Thready**
 - D. Normal**
- 5. Where is the V1 electrode typically placed on a standard EKG?**
 - A. On the right shoulder**
 - B. Mid-clavicular line, first intercostal space**
 - C. Left sternal border, fourth intercostal space**
 - D. In the center of the chest**

- 6. When should an EKG technician report a patient's symptoms during a stress test?**
- A. Whenever the patient feels tired**
 - B. Immediately if unexpected dysrhythmias occur**
 - C. Only at the end of the test**
 - D. When the physician arrives**
- 7. Which of the following rhythms can be identified through a 12-lead EKG?**
- A. Only normal sinus rhythm**
 - B. Normal sinus rhythm, atrial fibrillation, and ventricular tachycardia**
 - C. Only bradycardia and tachycardia**
 - D. Only atrial flutter**
- 8. Why is patient history important before performing an EKG?**
- A. To ensure patient comfort during the procedure**
 - B. To interpret the EKG accurately and identify underlying conditions**
 - C. To determine which leads to use for the EKG**
 - D. To prepare the patient for possible complications**
- 9. What is the purpose of the EKG machine calibration?**
- A. To enhance the clarity of heart sounds**
 - B. To ensure accurate measurements and proper scaling of the EKG tracing**
 - C. To increase the speed of the tracing output**
 - D. To change the lead configuration**
- 10. Which procedure should be completed to ensure accuracy before finalizing an EKG?**
- A. Ensure patient comfort**
 - B. Disconnect the patient immediately**
 - C. Check machine for artifacts**
 - D. Re-apply all electrodes**

Answers

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

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Explanations

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1. How can excessive potassium affect EKG readings?

- A. It decreases heart rate
- B. It causes a prolonged PR interval
- C. It can lead to widening of QRS complex**
- D. It has no effect on the EKG

Excessive potassium levels, or hyperkalemia, have a significant effect on cardiac electrophysiology, which is reflected in EKG readings. One of the hallmark changes associated with high potassium levels is the widening of the QRS complex. This happens because increased potassium disrupts the normal depolarization of cardiac myocytes, slowing conduction through the ventricles. As a result, the QRS duration lengthens, which can also lead to more serious arrhythmias if left unaddressed. The relationship between potassium levels and cardiac activity is crucial for interpreting EKGs in a clinical setting, as alterations in the QRS complex can indicate severe electrolyte imbalances and inform the need for immediate medical action. Understanding this connection helps EKG technicians recognize life-threatening conditions related to electrolyte disturbances.

2. What effect does digoxin have on the EKG?

- A. It causes a wide QRS complex
- B. It leads to shorter PR intervals
- C. It results in a characteristic "scooped" ST segment**
- D. It decreases heart rate significantly

Digoxin is a medication commonly used in the management of heart conditions such as atrial fibrillation and heart failure. One of the hallmark changes it induces in the electrocardiogram (EKG) is the characteristic "scooped" appearance of the ST segment. This "scooping" is a result of digoxin's effect on the myocardium and its interaction with cardiac electrical activity. Digoxin increases intracellular calcium concentrations, which can alter repolarization patterns. This modification causes the ST segment to display a distinct concave upward shape, setting it apart from the typical straight line seen in a normal EKG trace. This particular change can assist healthcare providers in identifying digoxin toxicity or monitoring patients on digoxin therapy. Recognizing this unique feature is essential for interpreting EKGs accurately in patients taking the medication. Thus, the presence of a scooped ST segment is a direct indicator of digoxin's influence on cardiac electrical activity.

3. What should a technician monitor for signs of ischemia during an EKG?

- A. Increased heart rate**
- B. Changes in ST segments**
- C. Decreased blood pressure**
- D. Decreased respiratory rate**

Monitoring changes in ST segments is crucial for identifying signs of myocardial ischemia during an EKG. Ischemia occurs when the blood supply to the heart muscle is reduced, leading to insufficient oxygenation. This condition often manifests as changes in the ST segment of the EKG trace. Elevations or depressions in the ST segment can indicate damage or stress to the heart tissue. For instance, ST segment elevation may suggest an acute myocardial infarction, while ST segment depression can reflect subendocardial ischemia or coronary artery disease. Therefore, careful observation of these segment changes provides essential information about the heart's status and helps guide further diagnostic and therapeutic interventions. While other symptoms such as increased heart rate, decreased blood pressure, or decreased respiratory rate can accompany ischemia, they are not specific markers observed directly on the EKG tracing. Instead, the ST segment changes provide a direct and specific indicator of ischemic conditions within the heart muscle, making it the most critical element to monitor during an EKG for signs of ischemia.

4. What term should a technician use to document when the pulse rhythm is not regular?

- A. Weak**
- B. Irregular**
- C. Thready**
- D. Normal**

The term "irregular" is accurately used to document a pulse rhythm that does not occur at consistent intervals or patterns. In clinical terminology, an irregular pulse can indicate various underlying conditions and may warrant further investigation. This term effectively conveys to healthcare professionals that the rhythm varies, which is crucial information for assessing the patient's cardiovascular status. The other terms, while descriptive in their own right, refer to different qualities of the pulse. "Weak" implies a diminished strength of the pulse, which does not specifically describe the consistency or pattern of the rhythm. "Thready" refers to a weak and thin pulse that can be felt, often associated with conditions like shock or severe blood loss, but does not clearly indicate irregularity. "Normal" suggests the absence of abnormalities in the pulse rhythm, which contradicts the premise of documenting irregularity. Thus, using "irregular" is the most appropriate and precise term for documenting an inconsistent pulse rhythm.

5. Where is the V1 electrode typically placed on a standard EKG?

- A. On the right shoulder**
- B. Mid-clavicular line, first intercostal space**
- C. Left sternal border, fourth intercostal space**
- D. In the center of the chest**

The V1 electrode is positioned specifically on the left sternal border at the fourth intercostal space. This placement is critical as it allows for effective monitoring of the electrical activity of the heart, especially in the septal region and the right ventricle. The V1 electrode plays a vital role in the interpretation of EKGs and helps to identify various cardiac conditions, including arrhythmias and myocardial infarction. Placing the electrode in this location ensures that it captures the direction and intensity of electrical signals traveling through the heart. This positioning is part of a standardized 12-lead EKG setup, where each lead offers a different perspective on the heart's electrical activity, helping healthcare professionals diagnose and treat cardiac issues accurately.

6. When should an EKG technician report a patient's symptoms during a stress test?

- A. Whenever the patient feels tired**
- B. Immediately if unexpected dysrhythmias occur**
- C. Only at the end of the test**
- D. When the physician arrives**

Timely reporting of a patient's symptoms during a stress test is crucial for the safety and effectiveness of the procedure. In particular, immediate reporting of unexpected dysrhythmias is vital because these can indicate underlying cardiac issues that require prompt medical attention. Dysrhythmias could signal a significant problem, such as ischemia or other complications, and noting them in real-time allows healthcare providers to respond quickly, ensuring the patient receives the necessary care. The other options imply delays or non-critical reporting of symptoms, which could compromise patient safety. For instance, waiting until the end of the test does not afford an opportunity for immediate intervention, and reporting symptoms only when the physician arrives might lead to missed critical moments in patient care. Additionally, while fatigue can be a normal experience during a stress test, it does not typically warrant the same level of immediate concern that dysrhythmias do. Therefore, the emphasis on immediate reporting of unexpected dysrhythmias is a standard practice to enhance patient monitoring and safety during such procedures.

7. Which of the following rhythms can be identified through a 12-lead EKG?

- A. Only normal sinus rhythm**
- B. Normal sinus rhythm, atrial fibrillation, and ventricular tachycardia**
- C. Only bradycardia and tachycardia**
- D. Only atrial flutter**

A 12-lead EKG is a powerful diagnostic tool that allows for the comprehensive assessment of various heart rhythms and conditions. The correct choice indicates that multiple types of rhythms can be identified using this method, specifically normal sinus rhythm, atrial fibrillation, and ventricular tachycardia. Normal sinus rhythm is characterized by a consistent heart rate and rhythm, which reflects normal heart function. Atrial fibrillation is an arrhythmia marked by chaotic electrical signals in the atria, resulting in an irregularly irregular heart rhythm. Ventricular tachycardia is a potentially life-threatening condition characterized by a fast heart rate originating in the ventricles. Each of these rhythms presents distinct patterns on a 12-lead EKG, and being able to identify them is crucial for proper diagnosis and treatment. In contrast, the other options suggest a limited capacity for rhythm identification. The first choice implies that only normal sinus rhythm can be detected, which neglects the diversity of arrhythmias that can be observed. The third option would also restrict the identification to bradycardia and tachycardia, overlooking the many other significant arrhythmias present. Lastly, the fourth choice suggesting only atrial flutter fails to recognize that many more arrhythmias are

8. Why is patient history important before performing an EKG?

- A. To ensure patient comfort during the procedure**
- B. To interpret the EKG accurately and identify underlying conditions**
- C. To determine which leads to use for the EKG**
- D. To prepare the patient for possible complications**

Understanding patient history is crucial before performing an EKG because it provides context needed for accurate interpretation of the results. An EKG can reveal a variety of heart conditions, but its accuracy and relevance depend significantly on knowing the patient's medical background. Factors such as previous heart conditions, existing symptoms, medications, and any family history of cardiovascular disease can all influence what an EKG shows and how it should be interpreted. For instance, if a patient has a history of arrhythmias, knowledge of that history can help the technician or physician look specifically for signs of such conditions on the EKG. Additionally, previous medical conditions and current symptoms can guide clinical decisions, particularly in emergency situations where immediate and accurate diagnoses are vital. In contrast, while patient comfort is important, the primary aim of gathering history is not solely about comfort during the procedure. The choice of leads used in an EKG is generally standardized based on established protocols, rather than individualized patient history, although certain adjustments might be made in specific scenarios. Lastly, preparing patients for possible complications, while a valid consideration in many medical procedures, is not the main focus of historical data collection in this context.

9. What is the purpose of the EKG machine calibration?

- A. To enhance the clarity of heart sounds
- B. To ensure accurate measurements and proper scaling of the EKG tracing**
- C. To increase the speed of the tracing output
- D. To change the lead configuration

The purpose of EKG machine calibration is primarily to ensure accurate measurements and proper scaling of the EKG tracing. Calibration helps in standardizing the machine's output, which is crucial for effectively diagnosing heart conditions. Each lead on the EKG machine needs to produce consistent results in terms of amplitude and timing, which can directly influence the interpretation of the heart's electrical activity. By calibrating the machine, technicians ensure that the voltage changes detected are displayed correctly, allowing healthcare providers to make informed decisions based on the data. Correct calibration also aids in minimizing errors that may arise from inconsistent recordings, which could lead to misinterpretation of cardiac events. Therefore, maintaining proper calibration of the EKG machine is essential for accurate diagnostics and patient care.

10. Which procedure should be completed to ensure accuracy before finalizing an EKG?

- A. Ensure patient comfort
- B. Disconnect the patient immediately
- C. Check machine for artifacts**
- D. Re-apply all electrodes

To ensure accuracy before finalizing an EKG, checking the machine for artifacts is essential. Artifacts can be caused by a variety of factors, including patient movement, poor electrode contact, or external electrical interference. By inspecting the EKG for these artifacts, the technician can identify any irregularities that might compromise the quality of the recording. Ensuring that the tracing is clear and devoid of artifacts is critical for an accurate interpretation of the heart's electrical activity. While ensuring patient comfort, disconnecting the patient immediately, or re-applying all electrodes can play roles in the overall EKG process, they don't specifically address the immediate need to confirm the reliability of the EKG readout prior to finalization. Ensuring there are no artifacts is a key step that directly impacts the accuracy of the EKG results and helps to avoid misdiagnoses or missed conditions.