# NHA Certified EKG Technician (CET) Exam

Free Practice Test — 30 Real Exam-Style Questions

with full answer key & explanations

# Practice Questions

Try all 30 first, then check the answer key at the back.



**1. Identify the heart rhythm shown in the following EKG strip: Lead I Lead II Lead III Normal P waves Normal P waves Normal P waves Regular QRS Wide QRS complexes Wide QRS complexes Regular T waves Inverted T waves**

A. Sinus rhythm progressing to ventricular fibrillation
B. Sinus rhythm with type 2 AV block
C. Sinus rhythm progressing to sinus tachycardia
D. Sinus rhythm progressing to ventricular tachycardia

**2. Which heart rhythms on an EKG strip show P-P intervals that are interrupted by a premature beat?**

A. Regular but interrupted rhythms
B. Regular rhythms
C. Irregular rhythms
D. Irregular rhythms with extended pauses

**3. An EKG strip shows a QT interval measured from the beginning of the Q wave to the end of the T wave that spans 9 small squares. Using the standard conversion factor that each small square represents 0.04 seconds, determine the QT interval duration.**

A. 0.50 seconds
B. 1.5 seconds
C. 0.36 seconds
D. 0.20 seconds



**4. Which of the following is part of the criteria for recognizing ventricular tachycardia (VT) on an EKG?**

A. Normal PR interval
B. Wide QRS complexes
C. Narrow QRS complexes
D. P wave present before each QRS complex

**5. Which characteristic of cardiac cells enables them to generate electrical impulses spontaneously without external stimulus?**

A. Contractility
B. Conductivity
C. Excitability
D. Automaticity

**6. Identify the correct sequence of waves and intervals on a standard EKG tracing.**

A. P wave → PR interval → T wave → QRS complex → ST segment
B. PR interval → P wave → QRS complex → T wave → ST segment
C. P wave → PR interval → QRS complex → ST segment → T wave
D. P wave → QRS complex → PR interval → ST segment → T wave



**7. What is the correct method to determine if a rhythm on an EKG is regular or irregular?**

A. Compare the R-R intervals to see if they are consistent
B. Measure the duration of the P waves
C. Analyze the amplitude of the QRS complexes
D. Check the height of the T waves

**8. Which part of the EKG illustrates the duration of the ventricular depolarization?**

A. QT interval
B. PR interval
C. QRS complex
D. P wave

**9. How would you address the artifact shown below?**

A. Reposition the pacemaker catheter
B. Ask the patient to lie still
C. Ensure patient is warm and relaxed
D. Replace the pacemaker

**10. Which of the following is true regarding a left bundle branch block (LBBB)?**

A. It is also known as Mobitz II block
B. The QRS complex is prolonged
C. The PR interval is shortened
D. There are significant ST segment changes in lead III

**11. Determine the cardiac rhythm shown in the following EKG excerpt. Segment Description P wave Absent QRS complex Normal Rhythm Irregularly Irregular Additional Notes No distinct P waves or flutter waves**

A. Ventricular tachycardia
B. Wolff-Parkinson-White syndrome
C. Type 1 AV block
D. Atrial fibrillation

**12. Which type of cardiac arrhythmia is characterized by an electrical impulse originating from a location outside the atrioventricular (AV) node?**

A. Sinus bradycardia
B. Atrio-ventricular block
C. Ectopic rhythm
D. Junctional rhythm



**13. What is the defining characteristic of atrial fibrillation?**

A. Wide QRS complexes with no P waves
B. Irregularly irregular rhythm without distinct P waves
C. Presence of distinct P waves between QRS complexes
D. Regular rhythm with a rate of 300 beats per minute

**14. How do changes in the QRS complex during a ventricular fibrillation episode reflect the underlying cardiac condition?**

A. ST-segment elevation
B. T wave inversion
C. P wave irregularity
D. Disorganized electrical activity

**15. During which phase of the cardiac cycle do the atria contract, pushing blood into the ventricles?**

A. Ventricular systole
B. Atrial diastole
C. Atrial systole
D. Ventricular diastole



**16. Which of the following indicates a proper EKG lead placement for accurate cardiac monitoring?**

A. Focusing on the electrical signal quality rather than lead placement
B. Placing the chest leads at the correct anatomical landmarks
C. Placing the limb leads at equal intervals around the torso
D. Ensuring all leads are placed equidistant from the heart

**17. Which of the following leads is most commonly used to monitor the ST segment?**

A. Lead V5
B. Lead V1
C. Lead I
D. Lead aVF

**18. In an EKG reading, if the atrial rate is measured at 75 bpm and the ventricular rate is recorded at 45 bpm, what condition is likely present?**

A. Atrial fibrillation
B. Ventricular fibrillation
C. AV block
D. Sinus tachycardia



**19. What does the ST segment represent on an EKG?**

A. Ventricular depolarization
B. Atrial repolarization
C. The time from the end of ventricular depolarization to the start of ventricular repolarization
D. The start of atrial depolarization to the end of atrial depolarization

**20. Which of the following is not part of the standard precautions to prevent infection during an EKG procedure?**

A. Administering antibiotics
B. Wearing gloves
C. Using hand sanitizer
D. Disinfecting equipment

**21. What is the term for the measurement of the amount of oxygen carried by hemoglobin in the blood?**

A. Heart rate
B. Oxygen saturation
C. Blood pressure
D. Cardiac output



**22. Which of the following is not required to comply with OSHA standards in a healthcare setting?**

A. A patient visiting for a routine check-up
B. A nurse providing patient care
C. A hospital's maintenance staff
D. An administrative worker processing patient records

**23. Which of the following is not one of the three common complications that can occur with improper lead placement during an EKG?**

A. Misdiagnosis of cardiac conditions
B. Incorrect heart rate calculation
C. Artifacts on the EKG
D. Accurate wave measurements

**24. Where is the lead V1 electrode placed?**

A. Fifth intercostal space, left midclavicular line
B. Fourth intercostal space, right sternal border
C. Third intercostal space, left sternal border
D. Fifth intercostal space, right midclavicular line

**25. What is an essential first step before administering a Holter monitor to a patient?**

A. Attach the electrodes to the patient's chest.
B. Ensure the monitor has fresh batteries.
C. Instruct the patient to avoid certain physical activities.
D. Provide a detailed explanation of how the Holter monitor works and what to expect during the monitoring period.

**26. In an EKG, which leads are defined as the chest leads?**

A. Limb leads
B. Augmented leads
C. Terminal leads
D. Precordial leads

**27. As you prepare to attach electrodes to a 40-year-old male for a stress test, he inquires about the potential risks associated with the procedure. What would be your appropriate response?**

A. The test carries no risks whatsoever
B. Possible skin irritation from the adhesive
C. Risk of severe burns from the electrodes
D. Possible heart attack during the test



**28. In the process of obtaining an EKG, understanding the various configurations and criteria for diagnosing heart conditions is crucial. Which of the following is not a typical finding associated with left bundle branch block (LBBB)?**

A. QRS duration greater than 0.12 seconds
B. Dominant S wave in V1
C. Broad and deep S wave in V1
D. RSR' pattern in V1 with ST-segment depression

**29. Which of the following actions can cause an AC interference artifact on an EKG tracing?**

A. Patient coughing
B. Deep breathing
C. Using an electric blanket
D. A loose EKG electrode

**30. Which of the following factors can cause a wandering baseline artifact on an EKG?**

A. Patient's breathing pattern
B. A patient having tremors
C. Electrical interference
D. A broken wire

# Answer Key & Explanations



**1. D — Sinus rhythm progressing to ventricular tachycardia**
Answer: Sinus rhythm progressing to ventricular tachycardia Ventricular tachycardia is characterized by wide, bizarre QRS complexes with an absence of any real rhythm. Prompt treatment is required to revert the patient to sinus rhythm.

**2. A — Regular but interrupted rhythms**
Answer: Regular but interrupted rhythms These types of rhythms are considered regular, interrupted by premature beats or pauses. They may look irregular at first, but a closer inspection will show one beat or a burst of several beats followed by a regular P-P interval. These premature beats can occur at any time during the rhythm.

**3. C — 0.36 seconds**
Answer: 0.36 seconds The QT interval is determined by counting the small squares between the beginning of the Q wave and the end of the T wave. With 9 small squares, the duration is calculated as 9 x 0.04 = 0.36 seconds.

**4. B — Wide QRS complexes**
Answer: Wide QRS complexes The criteria for recognizing ventricular tachycardia (VT) on an EKG include the following: - The presence of wide QRS complexes (greater than 0.12 seconds). - The QRS complexes are typically broad and bizarre in appearance. - P waves are usually absent or not related to the QRS complexes. - There is usually a rapid heart rate, often between 100 and 250 bpm. - The rhythm is typically regular, but it can be slightly irregular. - The presence of capture beats or fusion beats can indicate VT.

**5. D — Automaticity**
Answer: Automaticity Automaticity is the cell's ability to generate electrical impulses spontaneously without needing any external stimulus. Contractility is the ability to contract the cardiac muscle. Conductivity is the ability to pass electrical impulses along neighboring cells. Excitability is the ability to respond to electrical impulses through depolarization.

**6. C — P wave → PR interval → QRS complex → ST segment → T wave**
Correct answer: P wave → PR interval → QRS complex → ST segment → T wave This sequence represents the standard progression of electrical activity during a normal cardiac cycle. The P wave signifies atrial depolarization, the PR interval includes atrial depolarization and AV nodal delay, the QRS complex represents ventricular depolarization, the ST segment indicates the period before repolarization of the ventricles, and the T wave signifies ventricular repolarization.

**7. A — Compare the R-R intervals to see if they are consistent**
To determine if a rhythm on an EKG is regular or irregular, you should compare the R-R intervals. If the intervals between R waves are consistent, the rhythm is regular. This is a critical step in EKG analysis and helps in identifying various arrhythmias.

**8. C — QRS complex**
Answer: QRS complex The QRS complex represents the duration of ventricular depolarization. The P wave represents atrial depolarization, the PR interval represents the time between the start of atrial depolarization and the start of ventricular depolarization. The QT interval represents the time from the start of ventricular depolarization to the end of ventricular repolarization.

**9. A — Reposition the pacemaker catheter**
Answer: Reposition the pacemaker catheter. Muscle tremors and baseline wander are typically resolved by asking the patient to lie still or ensuring they are warm and relaxed. However, a loss of capture due to a weak pacemaker signal often requires repositioning the pacemaker catheter.

**10. B — The QRS complex is prolonged**
Answer: The QRS complex is prolonged A left bundle branch block (LBBB) results in the delayed or blocked conduction through the left bundle branch. This leads to a widening of the QRS complex on an EKG, typically over 0.12 seconds. The PR interval remains normal, and LBBB is not characterized by ST segment changes specific to lead III. Mobitz II block is a type of second-degree AV block, not related to LBBB.

**11. D — Atrial fibrillation**
Answer: Atrial fibrillation Atrial fibrillation is characterized by an irregularly irregular rhythm and the absence of distinct P waves. The QRS complexes are usually normal. Ventricular tachycardia typically shows wide QRS complexes and a regular rhythm. Wolff-Parkinson-White syndrome usually presents with a short PR interval and a Delta wave. Type 1 AV block displays a prolonged PR interval with regular atrial and ventricular rhythms.

**12. C — Ectopic rhythm**
Answer: Ectopic rhythm An ectopic rhythm occurs when the electrical impulse originates from a location other than the atrioventricular (AV) node, leading to irregular heartbeats. Junctional rhythms originate from the AV node area and are not considered ectopic. Sinus bradycardia is a slower than normal heart rate originating from the sinus node. Atrio-ventricular block is characterized by delayed or blocked electrical signals between the atria and ventricles.

**13. B — Irregularly irregular rhythm without distinct P waves**
Answer: Irregularly irregular rhythm without distinct P waves In atrial fibrillation, the hallmarks are an irregularly irregular rhythm and the absence of distinct P waves on the EKG. The atria do not contract properly, leading to disorganized electrical activity. Distinct P waves are seen in normal sinus rhythm and other types of atrial rhythms. A regular rhythm with a very high rate is more indicative of atrial flutter or supraventricular tachycardia. Wide QRS complexes without P waves could indicate ventricular tachycardia.

**14. D — Disorganized electrical activity**
Answer: Disorganized electrical activity Ventricular fibrillation is characterized by rapid and erratic electrical impulses. This makes the QRS complexes appear irregular and uncoordinated on the ECG, reflecting a lack of effective heart contraction. Myocardial infarction, on the other hand, usually shows more consistent and distinct abnormalities like ST-segment elevation. Myocardial ischemia may present with abnormalities in the T wave rather than the QRS complex. Atrial fibrillation primarily affects the P wave and does not have the chaotic QRS complex seen in ventricular fibrillation.

**15. C — Atrial systole**
Answer: Atrial systole Atrial systole is the phase of the cardiac cycle in which the atria contract, pushing blood

into the ventricles. This precedes ventricular systole, where the ventricles contract to expel blood.

**16. B — Placing the chest leads at the correct anatomical landmarks**
Answer: Placing the chest leads at the correct anatomical landmarks Accurate EKG lead placement is crucial for obtaining a reliable reading. Chest leads should be placed correctly at specific anatomical landmarks (e.g., V1 at the 4th intercostal space to the right of the sternum). Incorrect placement can lead to misinterpretation of the cardiac rhythms.

**17. A — Lead V5**
Answer: Lead V5 Lead V5 is most commonly utilized to monitor the ST segment due to its position over the left ventricle, where ischemic changes are often most apparent.

**18. C — AV block**
Answer: AV block An AV block occurs when there is a delay or complete block in the conduction between the atria and ventricles. This results in the atria and ventricles beating independently, with the ventricular rate usually being slower than the atrial rate.

**19. C — The time from the end of ventricular depolarization to the start of ventricular repolarization**
Answer: The time from the end of ventricular depolarization to the start of ventricular repolarization The ST segment is the time from the end of ventricular depolarization to the start of ventricular repolarization. The T wave represents ventricular repolarization, and the QRS complex represents ventricular depolarization. The PR segment spans the end of atrial depolarization to the start of ventricular depolarization.

**20. A — Administering antibiotics**
Answer: Administering antibiotics Administering antibiotics is not part of the standard precautions. Standard precautions include measures like wearing gloves, using hand sanitizer, and disinfecting equipment to prevent infection.

**21. B — Oxygen saturation**
Answer: Oxygen saturation Oxygen saturation refers to the percentage of hemoglobin that is bound with oxygen in the blood. Blood pressure is the force of blood against the artery walls. Cardiac output is the amount of blood the heart pumps in one minute, and heart rate is the number of heartbeats per minute.

**22. A — A patient visiting for a routine check-up**
Answer: A patient visiting for a routine check-up OSHA standards apply to employees and employers in healthcare settings focused on ensuring workplace safety and health. These include medical staff, maintenance personnel, and administrative workers. Patients, however, are not subject to OSHA regulations as they are not employees.

**23. D — Accurate wave measurements**
Answer: Accurate wave measurements. Accurate wave measurements are not a complication of improper lead placement. Common complications of improper lead placement during an EKG include the following: Misdiagnosis of cardiac conditions Incorrect heart rate calculation Artifacts on the EKG

**24. B — Fourth intercostal space, right sternal border**
Answer: Fourth intercostal space, right sternal border The V1 lead is placed in the fourth intercostal space to the right of the sternum. This placement provides critical views of the electrical activity of the right ventricle and septal wall of the heart.

**25. D — Provide a detailed explanation of how the Holter monitor works and what to expect during the monitoring period.**
Answer: Provide a detailed explanation of how the Holter monitor works and what to expect during the monitoring period. Before any procedure, it is crucial to educate the patient to reduce anxiety and ensure they understand the process. This explanation helps to alleviate any concerns they may have.

**26. D — Precordial leads**
Answer: Precordial leads The precordial leads, which include V1 to V6, are placed on the chest and provide a view of the heart's electrical activity from the transverse plane. Limb leads include RA, LA, RL, and LL, while augmented leads include aVR, aVL, and aVF. There is no such thing as terminal leads.

**27. B — Possible skin irritation from the adhesive**
Answer: Possible skin irritation from the adhesive A stress test is generally safe and only involves a minor risk of skin irritation due to the adhesive on the electrodes. The electrodes themselves do not cause burns, and there is no significant risk of a heart attack during the test.

**28. D — RSR' pattern in V1 with ST-segment depression**
Answer: RSR' pattern in V1 with ST-segment depression The criteria for an LBBB include: - QRS complex widened to greater than 0.12 seconds - Dominant S wave in V1 and V2 with broad, deep S waves - Absence of initial Q wave in leads I, V5, and V6

**29. C — Using an electric blanket**
Answer: Using an electric blanket AC interference is caused by electrical devices that are in close proximity to the EKG machine. A loose electrode can cause a wandering baseline artifact, not AC interference. Patient coughing can result in muscle artifacts, while deep breathing affects baseline sway.

**30. A — Patient's breathing pattern**
Answer: Patient's breathing pattern A wandering baseline artifact is often caused by movements related to a patient's breathing pattern. Somatic tremors are caused by patient tremors or shaking of the electric wires. Electrical interference causes a 60-cycle interference. A broken recording is due to a frayed or broken wire.

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