EPU Electrophysiology Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

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

1. The EP recording system receives all acquired and filtered signals from which component?

A. Signal amplifier

B. Pacing generator

C. Defibrillator

D. ECG monitor

2. Leads II, III, and aVF provide an inferior view of the heart.

A. True

B. False

C. Not sure

D. None of the above

3. Which option best describes the function of an EP recording system?

A. It directly receives, records, and displays all ECG/EGM signals from ECG electrodes and EP catheters

B. It amplifies the ECG signal

C. It converts digital data back to analog signals

D. It stores only ventricular signals

4. Intracardiac echocardiography is characterized by which of the following?

A. Providing images inside the heart

B. Providing only external chest wall images

C. Being incompatible with three-dimensional mapping

D. Being unable to image intracardiac structures

5. Phrenic nerve palsy may persist for up to which time frame before resolution is expected?

A. Up to 12 Months

B. 24 Hours

C. 2 Weeks

D. 5 Years

6. Which electrogram type includes both local and far-field signals and represents the summation of all cardiac activity?

A. Unipolar

B. Bipolar

C. Orthogonal

D. Multipolar

7. Early after-depolarizations occur after the cardiac cells have repolarized.

A. True

B. False

C. They occur during depolarization

D. They occur before depolarization

8. Phase 0 in pacemaker cells is slower than Phase 0 in ventricular myocytes.

A. True

B. False

C. Not determinable

D. Partially true

9. During RF energy delivery, irrigated tip catheters provide several benefits except which of the following?

A. Increase lesion size

B. Reduce inner tissue temperature

C. Allow higher power delivery

D. Decrease impedance rise

10. In a patient with AVNRT, adenosine will have any effect on the tachycardia.

A. True

B. False

C. Only at very high doses

D. Depends on the presence of pre-excitation

Answers

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

Explanations

1. The EP recording system receives all acquired and filtered signals from which component?

A. Signal amplifier

B. Pacing generator

C. Defibrillator

D. ECG monitor

The signal amplifier. In the EP lab, the tiny intracardiac signals picked up by catheters are first boosted and cleaned up by the signal amplifier, which provides gain and filtering to bring the signal into a usable range before digitization. The EP recording system then receives these amplified, filtered signals. The pacing generator mainly delivers stimuli, not the actual recorded signal; the defibrillator and ECG monitor are separate devices, not the source of the intracardiac recording path.

2. Leads II, III, and aVF provide an inferior view of the heart.

A. True

B. False

C. Not sure

D. None of the above

Inferior view is captured by the limb leads that look at the heart from below. In a standard ECG, limb leads form Einthoven's triangle. Lead II runs from the right arm to the left leg, Lead III runs from the left arm to the left leg, and aVF is the augmented view projecting toward the foot. Together these vectors point toward the bottom (inferior) surface of the heart, which is the area supplied mainly by the right coronary artery. Therefore electrical activity from the inferior wall is best seen in these leads, and ischemia or infarction there produces changes specifically in them. This makes the statement true.

3. Which option best describes the function of an EP recording system?

A. It directly receives, records, and displays all ECG/EGM signals from ECG electrodes and EP catheters

B. It amplifies the ECG signal

C. It converts digital data back to analog signals

D. It stores only ventricular signals

An EP recording system is designed to interface with all the heart's electrical signals—from surface ECG leads and intracardiac catheters—so it can directly receive, record, and display those signals. It combines amplification, filtering, and digitization to provide real-time, high-resolution traces and stored data, enabling visualization of atrial and ventricular activity and their timing relationships for mapping and analysis. While amplification is a necessary part of the system, the essential function is the comprehensive capture and display of ECG and intracardiac electrograms from all monitored sites; digital-to-analog conversion is not the primary goal, and the system does not limit storage to ventricular signals.

4. Intracardiac echocardiography is characterized by which of the following?

A. Providing images inside the heart

B. Providing only external chest wall images

C. Being incompatible with three-dimensional mapping

D. Being unable to image intracardiac structures

Intracardiac echocardiography uses a catheter-mounted ultrasound probe placed inside the heart, typically through venous access, to image intracardiac structures from within the chambers. This inside-the-heart vantage provides high-resolution, real-time views of the atria, ventricles, valves, and the positions of catheters or devices, which is especially useful during electrophysiology procedures and structural interventions. It can be used together with three-dimensional mapping systems, so it is not incompatible with 3D mapping. In contrast, external chest wall imaging describes transthoracic approaches, and the idea that ICE cannot image intracardiac structures is incorrect.

5. Phrenic nerve palsy may persist for up to which time frame before resolution is expected?

A. Up to 12 Months

B. 24 Hours

C. 2 Weeks

D. 5 Years

Recovery after phrenic nerve injury happens gradually as the nerve fibers regrow and reinnervate the diaphragm. Nerve regeneration proceeds at a slow pace (roughly 1–3 mm per day), so meaningful improvement typically appears over months, with many cases resolving within about a year. That's why the best answer is up to 12 months. Times like 24 hours or two weeks are too soon for actual nerve healing to manifest, and while rare cases can persist longer, five years is not the typical expectation. If no improvement is seen after about a year, further evaluation for persistent diaphragmatic paralysis or alternative causes is usually considered.

6. Which electrogram type includes both local and far-field signals and represents the summation of all cardiac activity?

A. Unipolar

B. Bipolar

C. Orthogonal

D. Multipolar

Unipolar electrograms reflect the global electrical field of the heart. With a distant reference electrode, the recorded signal at the sensing site includes both nearby (local) activation and signals coming from other regions (far-field). This combination yields a waveform that represents the summation of all cardiac activity as seen from that location, giving a broader view of activation across the heart. Bipolar recordings use two closely spaced electrodes and subtract the signals, which emphasizes local activation while greatly reducing far-field content, so they don't show the global summation. Orthogonal recordings capture activity along three perpendicular axes for directional information, not a single summated signal. Multipolar approaches sample from many sites to map activity, producing multiple localized signals rather than one global summation.

7. Early after-depolarizations occur after the cardiac cells have repolarized.

A. True

B. False

C. They occur during depolarization

D. They occur before depolarization

Early after-depolarizations happen during the repolarization phase of the cardiac action potential, often during the plateau or the early part of repolarization (phases 2–3). They arise when repolarization is delayed, such as with QT-prolonging conditions or drugs, and involve reactivation of inward currents (like L-type calcium channels) that create a new depolarizing surge before the cell fully returns to its resting potential. If a depolarization were to occur after the cell has completed repolarization, that would be a late afterdepolarization, which is a different phenomenon tied to diastolic calcium overload. So the statement is false because early after-depolarizations do not occur after repolarization; they occur during repolarization itself.

8. Phase 0 in pacemaker cells is slower than Phase 0 in ventricular myocytes.

A. True

B. False

C. Not determinable

D. Partially true

Phase 0 rapid depolarization is defined by the inward current that drives the membrane potential upward. In ventricular myocytes, this upstroke is powered mainly by a large fast inward Na+ current through voltage-gated sodium channels, producing a very rapid and steep rise and, hence, fast conduction. Pacemaker cells in the SA and AV nodes rely on calcium entry for their phase 0, primarily through L-type calcium channels (with some contribution from T-type). Calcium channels activate more slowly and carry a smaller current than the fast sodium channels, so the rate of rise of the membrane potential is slower. This makes phase 0 in pacemaker cells slower than in ventricular myocytes, which fits their function of slower, automatic pacing and conduction through nodal tissue.

9. During RF energy delivery, irrigated tip catheters provide several benefits except which of the following?

A. Increase lesion size

B. Reduce inner tissue temperature

C. Allow higher power delivery

D. Decrease impedance rise

Irrigation cools the electrode tip and the immediate tissue surface during RF delivery, which changes how energy heats the tissue. By keeping the surface from overheating, it prevents char formation, thrombus, and steam-related issues, and it also lowers the impedance rise that would otherwise limit energy delivery. This cooling allows you to apply higher power and for longer periods, leading to larger, more effective lesions because the energy can reach deeper tissue before surface damage becomes a problem. The irrigation's main effect is surface cooling to enable more efficient, deeper heating, not to reduce the temperature inside deeper tissue. So the notion that inner tissue temperature is reduced is not a true benefit of irrigated tips.

10. In a patient with AVNRT, adenosine will have any effect on the tachycardia.

A. True

B. False

C. Only at very high doses

D. Depends on the presence of pre-excitation

AVNRT depends on conduction through the AV node for its reentrant circuit. Adenosine temporarily blocks AV nodal conduction by activating A1 receptors, which hyperpolarizes nodal cells and reduces calcium currents. This brief AV nodal block interrupts the reentrant loop, terminating the tachycardia. The effect occurs with standard doses and does not rely on unusually high doses. The presence of pre-excitation doesn't prevent this termination, since the tachycardia mechanism in AVNRT is AV-nodal dependent; other tachycardias that use an accessory pathway might react differently, but AVNRT is typically terminated by adenosine.

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://epuelectrophysio.examzify.com

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