

EPU ELECTROPHYSIOLOGY PRACTICE EXAM (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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THE FULL VERSION STUDY GUIDE**

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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	15

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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. An atrial fibrillation episode that terminates spontaneously within seven days is best described as?**
 - A. Persistent AF
 - B. Paroxysmal AF
 - C. Long-standing AF
 - D. Permanent AF

- 2. Which of the following is a normal QRS duration value?**
 - A. <120 ms
 - B. >200 ms
 - C. 40-60 ms
 - D. 150-170 ms

- 3. Which term describes AF episodes that terminate spontaneously within seven days?**
 - A. Persistent AF
 - B. Paroxysmal AF
 - C. Long-standing AF
 - D. Nonvalvular AF

- 4. Which drug can be used for pharmacological induction of an arrhythmia?**
 - A. Adenosine
 - B. Isoproterenol
 - C. Epinephrine
 - D. Digoxin

- 5. During automatic supraventricular tachycardia, which phase of the action potential is elevated?**
 - A. Phase 0
 - B. Phase 4
 - C. Phase 2
 - D. Phase 3

- 6. During RF ablation of AVNRT, presence of junctional beats is an indication of slow pathway ablation.**
- A. True
 - B. False
 - C. No relation
 - D. Requires mapping
- 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. In a patient that has two pathways connected proximally and distally, with different conduction velocities but the same refractory period, would it be easy to induce reentrant tachycardia?**
- A. True
 - B. False
 - C. Not enough information
 - D. Depends on the direction of conduction
- 9. Which statement best describes the relationship between the signal amplifier and the EP recording system?**
- A. The signal amplifier feeds amplified signals to the EP recording system
 - B. The EP recording system amplifies signals and feeds them to the amplifier
 - C. They operate independently without connection
 - D. The EP recording system filters signals without amplification
- 10. Which piece of equipment captures the X-ray to produce an image?**
- A. Image intensifier
 - B. Fluoroscope
 - C. X-ray tube
 - D. Monitor

Answers

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

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Explanations

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1. An atrial fibrillation episode that terminates spontaneously within seven days is best described as?

- A. Persistent AF
- B. Paroxysmal AF**
- C. Long-standing AF
- D. Permanent AF

Paroxysmal atrial fibrillation describes episodes that come and go and stop on their own, typically lasting less than seven days. The defining feature is spontaneous termination within a short time frame. If AF lasts beyond seven days or needs intervention to stop (like cardioversion), it's considered persistent. Long-standing persistent AF remains continuous for more than a year, and permanent AF is when rhythm control is no longer pursued. So an AF episode that ends spontaneously within seven days fits paroxysmal AF.

2. Which of the following is a normal QRS duration value?

- A. <120 ms**
- B. >200 ms
- C. 40-60 ms
- D. 150-170 ms

QRS duration shows how long ventricular depolarization takes on the ECG. In a healthy heart, this happens quickly, so the QRS complex is narrow. The normal upper limit is about 120 milliseconds (0.12 seconds), with many sources citing 60–100 ms as typical. Therefore, a QRS duration shorter than 120 ms is considered normal. When the QRS duration exceeds 120 ms, it signals delayed intraventricular conduction, such as a bundle branch block or other conduction abnormalities. Values like 150–170 ms or over 200 ms clearly indicate abnormal conduction. A value of 40–60 ms is shorter than typical for adults and is not regarded as the normal range in standard ECG interpretation.

3. Which term describes AF episodes that terminate spontaneously within seven days?

- A. Persistent AF
- B. Paroxysmal AF**
- C. Long-standing AF
- D. Nonvalvular AF

Paroxysmal atrial fibrillation describes episodes that start and stop on their own, terminating within seven days (often within 24–48 hours). This duration pattern is what sets paroxysmal AF apart from persistent AF, which lasts longer than seven days and typically requires intervention to terminate. Long-standing persistent AF refers to continuous AF lasting more than 12 months, and nonvalvular AF simply describes AF not caused by a valvular issue, not its episode length. In this case, the spontaneous termination within seven days points to paroxysmal atrial fibrillation.

4. Which drug can be used for pharmacological induction of an arrhythmia?

- A. Adenosine
- B. Isoproterenol**
- C. Epinephrine
- D. Digoxin

Pharmacological induction of arrhythmias relies on a drug that increases sympathetic stimulation to make abnormal electrical circuits more likely to fire. Isoproterenol, a beta-adrenergic agonist, does exactly that by raising heart rate and conduction and shortening refractory periods in atrial and AV nodal tissue. This makes it easier to provoke tachyarrhythmias in a controlled electrophysiology study, which is why it's used for induction. Adenosine, by contrast, blocks AV conduction and often terminates AV nodal-dependent tachycardias rather than inducing them. Digoxin tends to slow conduction and can be proarrhythmic mainly in toxicity, not used to provoke inducible arrhythmias. Epinephrine can increase sympathetic activity but is less specific and not the standard induction agent in EP protocols.

5. During automatic supraventricular tachycardia, which phase of the action potential is elevated?

- A. Phase 0
- B. Phase 4**
- C. Phase 2
- D. Phase 3

In automatic tachycardia, the driving factor is increased automaticity of the pacemaker tissue, which comes from the diastolic depolarization phase. This is phase 4 of the cardiac action potential. When the slope of phase 4 is elevated, the membrane potential climbs to the threshold more quickly, causing impulses to fire sooner and at a faster rate. The other phases represent rapid depolarization (phase 0), the plateau (phase 2), and repolarization (phase 3) in working myocardium and are not the source of automatic firing. So the elevated phase is phase 4.

6. During RF ablation of AVNRT, presence of junctional beats is an indication of slow pathway ablation.

- A. True**
- B. False
- C. No relation
- D. Requires mapping

During RF ablation for AVNRT, the slow pathway lies in the posterior inferior region of the AV node. When energy is delivered in that area, irritation of the nodal tissue often produces AV junctional beats. This junctional rhythm serves as a practical signal that you are at or near the slow-pathway tissue being targeted and that the ablation is engaging the slow pathway to modify the reentrant circuit. It's a helpful intra-procedural marker indicating you're affecting the intended tissue without yet risking complete AV block. While not the sole determinant of success, the appearance of junctional beats during the ablation is considered a favorable sign of slow-pathway modification.

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. In a patient that has two pathways connected proximally and distally, with different conduction velocities but the same refractory period, would it be easy to induce reentrant tachycardia?

- A. True
- B. False**
- C. Not enough information
- D. Depends on the direction of conduction

Reentrant tachycardia needs a closed loop where an impulse can travel around and re-excite tissue after it has recovered. Here there are two parallel pathways between the same two points, with different speeds but the same refractory period. The same refractory period means the tissue on both pathways recovers at essentially the same time after being activated. That makes unidirectional block less likely: for reentry to start, one direction must conduct while the opposite direction is still refractory. If both paths recover together, that timing advantage is lost, so a premature impulse is unlikely to set up a stable reentrant circuit. So, despite the velocity difference, it would not be easy to induce reentrant tachycardia.

9. Which statement best describes the relationship between the signal amplifier and the EP recording system?

- A. The signal amplifier feeds amplified signals to the EP recording system**
- B. The EP recording system amplifies signals and feeds them to the amplifier
- C. They operate independently without connection
- D. The EP recording system filters signals without amplification

The signal being measured in EP tests is extremely small, so it must be boosted early in the signal path to survive noise and interference. A preamplifier or signal amplifier is placed close to the source to raise the voltage while keeping the signal's character intact and providing a low-impedance drive to the recording system. Once the signal is amplified, the EP recording system digitizes and processes it. This setup ensures better signal-to-noise ratio and proper dynamic range for the recorder. That's why the best description is that the signal amplifier feeds amplified signals to the EP recording system. It reflects the practical flow of data from a tiny biological signal to a form the recorder can accurately capture. The other options imply either the recording system doing the initial amplification, operating independently without connection, or only filtering without amplification, all of which don't align with how EP measurements preserve signal integrity and enable accurate recording.

10. Which piece of equipment captures the X-ray to produce an image?

A. Image intensifier

B. Fluoroscope

C. X-ray tube

D. Monitor

In this imaging setup, the device that actually captures the X-ray photons and turns them into a visible image is the image intensifier. After X-rays pass through the patient, they strike the image intensifier, which uses a scintillator to convert the X-rays to light and then amplifies and converts that signal into an electronic image that is shown on the display. The fluoroscope refers to the whole live-imaging system, including the X-ray source and the image receptor, but the capture and formation of the image come from the image intensifier. The X-ray tube is the source of the X-rays, not the image capture, and the monitor is just where the image is viewed. So the image intensifier is the component that captures the X-ray to produce the image.

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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!

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