

Emergency Nursing Orientation 3.0: Cardiovascular Emergencies 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. When is thrombolytic therapy indicated in STEMI, and what are key contraindications?**
 - A. Indicated if PCI cannot be performed within 120 minutes of first medical contact and within 12 hours of symptom onset; contraindications include active bleeding, recent intracranial surgery or stroke, hemorrhagic stroke, known bleeding disorders, severe hypertension.**
 - B. Indicated only if PCI is available within 90 minutes; contraindications: stable vitals, no bleeding risk.**
 - C. Indicated when chest pain lasts more than 6 hours; contraindications: uncomplicated hypertension.**
 - D. Indicated immediately for all STEMI patients; contraindications: none.**

- 2. In hypertensive emergencies, what is a key principle for initial BP reduction?**
 - A. Lower BP by 50-60% within the first hour**
 - B. Initiate oral antihypertensives only**
 - C. Maintain current blood pressure to avoid hypoperfusion**
 - D. Reduce mean arterial pressure by about 20-25% within the first hour**

- 3. In an inferior STEMI suspected to involve the right coronary artery, which condition must be ruled out before giving nitrates?**
 - A. Left main coronary artery disease**
 - B. Left ventricular infarction**
 - C. Right ventricular infarction**
 - D. Aortic dissection**

- 4. From which point is door-to-balloon time measured in STEMI patients undergoing PCI?**
 - A. From first medical contact to balloon inflation**
 - B. From hospital arrival to balloon inflation**
 - C. From symptom onset to balloon inflation**
 - D. From ECG interpretation to balloon inflation**

- 5. Why should nitrates be avoided in suspected right ventricular infarction?**
- A. They cause tachycardia**
 - B. They decrease preload, risking severe hypotension**
 - C. They decrease afterload**
 - D. They improve contractility**
- 6. Which risk score is generally more predictive of mortality in ACS and is often used to guide invasive strategies and disposition?**
- A. GRACE score**
 - B. TIMI score**
 - C. APACHE II**
 - D. CHA2DS2-VASc**
- 7. Which disorder can initiate atrial flutter?**
- A. Hypovolemia**
 - B. Hyperkalemia**
 - C. Pulmonary edema**
 - D. Pulmonary embolism**
- 8. Which premature complex requires monitoring and is characterized by a single, premature beat from the ventricles that can be followed by a pause?**
- A. Couplets**
 - B. Unifocal premature ventricular complexes**
 - C. Multifocal premature ventricular complexes**
 - D. Premature ventricular complex**
- 9. Which premature ventricular complex morphology involves multiple ventricular foci and typically requires monitoring?**
- A. Unifocal premature ventricular complexes**
 - B. Bigeminy**
 - C. Couplets**
 - D. Multifocal premature ventricular complexes**

10. What is a potential adverse effect of esmolol in this setting?

- A. Hypotension**
- B. Hyperkalemia**
- C. Bradycardia**
- D. Tachycardia**

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Answers

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

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Explanations

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1. When is thrombolytic therapy indicated in STEMI, and what are key contraindications?

- A. Indicated if PCI cannot be performed within 120 minutes of first medical contact and within 12 hours of symptom onset; contraindications include active bleeding, recent intracranial surgery or stroke, hemorrhagic stroke, known bleeding disorders, severe hypertension.**
- B. Indicated only if PCI is available within 90 minutes; contraindications: stable vitals, no bleeding risk.**
- C. Indicated when chest pain lasts more than 6 hours; contraindications: uncomplicated hypertension.**
- D. Indicated immediately for all STEMI patients; contraindications: none.**

Thrombolytic therapy in STEMI is used when you cannot get prompt primary PCI. The protective goal is rapid reperfusion, so the therapy is indicated if PCI cannot be performed within about 120 minutes of first medical contact and, overall, within 12 hours of symptom onset (earlier is better). The major contraindications are situations that markedly raise the risk of serious bleeding or hemorrhagic transformation, such as active bleeding, a history of hemorrhagic stroke or any current intracranial hemorrhage, recent intracranial surgery or head trauma, known bleeding disorders or very low platelets, and severe uncontrolled hypertension. In the presence of any of these contraindications, thrombolytic therapy should be avoided in favor of alternative reperfusion strategies, primarily primary PCI if available.

2. In hypertensive emergencies, what is a key principle for initial BP reduction?

- A. Lower BP by 50-60% within the first hour**
- B. Initiate oral antihypertensives only**
- C. Maintain current blood pressure to avoid hypoperfusion**
- D. Reduce mean arterial pressure by about 20-25% within the first hour**

In hypertensive emergencies, the goal of initial management is to lower blood pressure in a controlled way to limit ongoing end-organ damage while avoiding insufficient perfusion to critical organs. The best approach is to reduce mean arterial pressure by about 20-25% within the first hour. This targeted, moderate drop protects the brain, heart, and kidneys from further injury yet prevents a sudden, excessive fall that could cause cerebral ischemia, myocardial or renal hypoperfusion. Why this target works: a gradual but meaningful decrease helps reverse dangerous pressures without cutting off blood flow to vital tissues. Dropping BP by a large fraction immediately increases the risk of hypoperfusion and ischemia, while not reducing it enough can allow ongoing damage from the hypertensive crisis. The reduction is usually achieved with intravenous antihypertensives, which allow rapid, titratable control and safer progression toward a safer BP over the next several hours. After the initial hour, the plan typically continues toward a target around 160/100 within a few hours and then toward normal over 24-48 hours, unless specific conditions call for a different approach (such as dissection or pregnancy).

3. In an inferior STEMI suspected to involve the right coronary artery, which condition must be ruled out before giving nitrates?

- A. Left main coronary artery disease**
- B. Left ventricular infarction**
- C. Right ventricular infarction**
- D. Aortic dissection**

In an inferior STEMI with suspected RCA involvement, the right ventricle may also be infarcted. The key idea is that nitrates lower preload by venodilation. If the right ventricle is damaged, the heart relies on adequate preload to drive output to the left ventricle. Reducing that preload can cause a dangerous drop in cardiac output and profound hypotension or shock. So before giving nitrates, you must determine whether there is right ventricular infarction. Look for signs of RV involvement such as hypotension with clear lungs and elevated JVP, and obtain right-sided ECG leads (like V4R) to detect right-sided ST elevations. If RV infarction is present, the appropriate approach is to avoid nitrates and provide measures to support RV preload, typically with cautious IV fluid boluses and careful hemodynamic monitoring. Only after RV involvement is ruled out or adequately managed can nitrates be considered based on the patient's overall stability.

4. From which point is door-to-balloon time measured in STEMI patients undergoing PCI?

- A. From first medical contact to balloon inflation**
- B. From hospital arrival to balloon inflation**
- C. From symptom onset to balloon inflation**
- D. From ECG interpretation to balloon inflation**

Door-to-balloon time measures how quickly the healthcare system can deliver definitive reperfusion after care has begun within the patient's care pathway. It is defined as the interval from first medical contact to balloon inflation during PCI. This focuses on system performance—from the moment EMS or hospital staff first engages with the patient to the moment the blocked artery is opened. This is why the other options don't fit. From hospital arrival to balloon inflation misses prehospital contact and transport steps that occur before arrival. From symptom onset to balloon inflation includes patient delay in seeking care, which isn't the aim of this metric. From ECG interpretation to balloon inflation ignores the many steps that happen after initial interpretation, such as activation of the cath lab and prep time.

5. Why should nitrates be avoided in suspected right ventricular infarction?

- A. They cause tachycardia
- B. They decrease preload, risking severe hypotension**
- C. They decrease afterload
- D. They improve contractility

The main idea is that the right ventricle relies heavily on adequate venous return (preload) to pump effectively. In suspected right ventricular infarction, maintaining preload is essential to keep RV output and systemic blood pressure. Nitrates cause venodilation, which lowers venous return and reduces RV filling. That drop in preload can sharply decrease RV stroke volume and overall cardiac output, leading to severe hypotension or shock. Nitrates don't improve contractility, and their modest afterload-reducing effect doesn't help here; the big risk is the loss of preload. Clinically, if RV infarction is possible, preload should be supported (for example, with IV fluids) and nitrates avoided until RV function is clarified.

6. Which risk score is generally more predictive of mortality in ACS and is often used to guide invasive strategies and disposition?

- A. GRACE score**
- B. TIMI score
- C. APACHE II
- D. CHA2DS2-VASc

In ACS, predicting mortality helps decide how aggressively to treat and where to place a patient. The GRACE score is generally more predictive of mortality than the other common risk scores and is frequently used to guide invasive strategies and disposition. It was developed from large ACS cohorts and combines multiple clinically meaningful factors that reflect both the patient's baseline risk and the acute severity of the event. Specifically, it includes age, heart rate, systolic blood pressure, creatinine (renal function), Killip class (heart failure on presentation), whether there was cardiac arrest at presentation, ST-segment deviation, and elevated cardiac enzymes. This mix of chronic and acute data gives GRACE stronger discrimination for in-hospital and 6-month mortality across STEMI and NSTEMI than scores that focus on fewer domains. Because of this, a higher GRACE score points toward more urgent catheterization and aggressive management, while a lower score can support more conservative pathways. In contrast, TIMI is helpful but generally less predictive of mortality in ACS, APACHE II is a broad ICU severity score not specific to ACS, and CHA2DS2-VASc is used to estimate stroke risk in atrial fibrillation, not mortality risk in ACS.

7. Which disorder can initiate atrial flutter?

- A. Hypovolemia
- B. Hyperkalemia
- C. Pulmonary edema
- D. Pulmonary embolism**

Atrial flutter starts when a reentrant circuit forms in the atria, often driven by acute atrial stretch or irritation that alters conduction and creates a self-sustaining pathway. A pulmonary embolism fits this nicely because the sudden obstruction in the pulmonary vasculature causes acute right heart strain and right atrial dilation. That rapid change in atrial pressure and size sets the stage for a reentrant circuit to emerge, initiating atrial flutter. The other options don't typically act as triggers for this arrhythmia. Hypovolemia lowers preload and doesn't specifically provoke the atrial reentry mechanism. Hyperkalemia disrupts conduction and normally leads to bradyarrhythmias or ventricular issues rather than initiating atrial flutter. Pulmonary edema reflects left-sided pressures and can predispose to atrial fibrillation more than atrial flutter. Therefore, pulmonary embolism is the scenario most associated with initiating atrial flutter.

8. Which premature complex requires monitoring and is characterized by a single, premature beat from the ventricles that can be followed by a pause?

- A. Couplets
- B. Unifocal premature ventricular complexes
- C. Multifocal premature ventricular complexes
- D. Premature ventricular complex**

The main idea here is recognizing a ventricular ectopic beat that interrupts the normal rhythm and occurs earlier than expected. This is a premature ventricular complex. You can spot it on ECG as a wide, bizarre-looking QRS complex that appears without a preceding P wave and arrives sooner than the next expected beat, often followed by a compensatory pause as the heart resets. This single premature beat is what sets it apart from other patterns: two consecutive premature beats would be a couplet; PVCs that look the same on all beats come from one focus (unifocal), while PVCs with varying shapes come from multiple foci (multifocal). The description emphasizes a lone premature beat with a possible pause, which is exactly a premature ventricular complex. In clinical terms, this can be benign, but it's important to monitor frequency and pattern because frequent PVCs or certain configurations can indicate underlying issues needing further evaluation.

9. Which premature ventricular complex morphology involves multiple ventricular foci and typically requires monitoring?

- A. Unifocal premature ventricular complexes**
- B. Bigeminy**
- C. Couplets**
- D. Multifocal premature ventricular complexes**

Premature ventricular complexes reveal where in the ventricle they originate. If every PVC looks the same on the ECG, they come from a single ventricular focus—unifocal. If the PVCs have several different shapes, they come from more than one ventricular location—multifocal. Multifocal PVCs indicate greater ventricular irritability and are typically monitored because they can signal evolving instability or underlying issues such as ischemia, electrolyte abnormalities, hypoxia, or drug toxicity, and may portend progression to more dangerous rhythms. The other patterns describe rhythm arrangement rather than the origin of the ectopic beats. Bigeminy means a PVC follows every normal beat, and couplets are two PVCs in a row; these patterns can occur with either unifocal or multifocal PVCs, but they don't specify multiple foci.

10. What is a potential adverse effect of esmolol in this setting?

- A. Hypotension**
- B. Hyperkalemia**
- C. Bradycardia**
- D. Tachycardia**

Esmolol blocks beta-1 receptors in the heart, which slows the firing of the SA node and slows conduction through the AV node. In a setting where you're trying to rapidly control heart rate, the most likely adverse effect is bradycardia because the heart rate drops as the pacemaker and conduction pathways are suppressed. This can reduce cardiac output and potentially cause hypotension, so it requires careful titration and monitoring. The drug's very short half-life (about 9 minutes) means any bradycardia is usually quickly reversible once the infusion is adjusted or stopped. Hyperkalemia isn't a typical effect of beta-blockade, and tachycardia would be opposite the drug's action, so it's not expected.

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://emnursingorientation3cardioem.examzify.com>

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

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