

A&P CARDIOVASCULAR SYSTEM PRACTICE TEST (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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. During inspiration, how is venous return to the right heart affected?**
 - A. Decreases venous return due to higher intrathoracic pressure
 - B. Increases venous return due to lower intrathoracic pressure
 - C. Venous return is unchanged during inspiration
 - D. Increases venous return due to diaphragmatic relaxation
- 2. The semilunar valves are located between the ventricles and the major arteries leaving the heart.**
 - A. Between the ventricles and major arteries leaving the heart
 - B. Between the atria and ventricles
 - C. Between the ventricles and the atria
 - D. Between the right atrium and right ventricle
- 3. Preload is largely determined by end-diastolic volume; higher EDV stretches the ventricles more and increases preload. Which statement best describes preload?**
 - A. Preload is largely determined by end-diastolic volume; higher EDV stretches the ventricles more and increases preload
 - B. Preload equals end-systolic volume
 - C. Preload is determined by heart rate
 - D. Preload is independent of EDV
- 4. The phase of the cardiac cycle in which the ventricles contract is called what?**
 - A. Diastole
 - B. Systole
 - C. Isovolumetric contraction
 - D. Atrial kick
- 5. Which heart layer is responsible for contraction and forms the muscular wall?**
 - A. Myocardium
 - B. Endocardium
 - C. Epicardium
 - D. Parietal Pericardium

- 6. Which factor most directly increases afterload?**
- A. Heart rate
 - B. Venous return
 - C. Preload
 - D. Aortic pressure
- 7. Which term refers to widening of the blood vessels that allows for increased blood flow?**
- A. Vasodilation
 - B. Vasoconstriction
 - C. Shock
 - D. Hypotension
- 8. Which valves close to produce S1, and which valves close to produce S2?**
- A. S1 is caused by closure of the AV valves (mitral and tricuspid) at the start of systole; S2 is caused by closure of the semilunar valves (aortic and pulmonary)
 - B. S1 is caused by closure of the semilunar valves (aortic and pulmonary) at the start of systole; S2 is caused by closure of the AV valves
 - C. S1 is caused by closure of the AV valves at the end of diastole; S2 by closure of the AV valves
 - D. S1 is caused by closure of the AV valves at the start of systole; S2 is caused by closure of the semilunar valves
- 9. Which term refers to the body's ability to deliver adequate blood to tissues?**
- A. Tissue perfusion
 - B. Plasma
 - C. Shock
 - D. Hypertension
- 10. Between which chambers do the atrioventricular valves reside?**
- A. Between the atria and ventricles
 - B. Between the ventricles and major arteries
 - C. Between the right atrium and right ventricle
 - D. Between the left atrium and left ventricle

Answers

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

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Explanations

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1. During inspiration, how is venous return to the right heart affected?

- A. Decreases venous return due to higher intrathoracic pressure
- B. Increases venous return due to lower intrathoracic pressure**
- C. Venous return is unchanged during inspiration
- D. Increases venous return due to diaphragmatic relaxation

During inspiration, the chest expands and the diaphragm contracts, making intrathoracic pressure more negative. That drop in pressure pulls more blood into the thorax from the veins, increasing venous return to the right heart via the vena cavae. The stronger gradient for blood flow into the thoracic cavity enhances right atrial filling and preload. The idea of higher intrathoracic pressure would reduce venous return and is what happens during expiration, not inspiration. And diaphragmatic relaxation would raise intrathoracic pressure, not promote the increased return seen with inspiration.

2. The semilunar valves are located between the ventricles and the major arteries leaving the heart.

- A. Between the ventricles and major arteries leaving the heart**
- B. Between the atria and ventricles
- C. Between the ventricles and the atria
- D. Between the right atrium and right ventricle

Semilunar valves sit at the exits of the ventricles, where blood leaves the heart and enters the great arteries. There are two: one between the left ventricle and the aorta, and one between the right ventricle and the pulmonary trunk. This placement lets them regulate the flow of blood into the major arteries and prevent backflow when the heart relaxes. When the ventricles contract, pressure pushes the cusps open to eject blood; as the ventricles relax, arterial pressure pushes the cusps closed to stop blood from flowing back into the ventricles. The other descriptions refer to valves between the atria and ventricles (the atrioventricular valves), which are not semilunar.

3. Preload is largely determined by end-diastolic volume; higher EDV stretches the ventricles more and increases preload. Which statement best describes preload?

- A. Preload is largely determined by end-diastolic volume; higher EDV stretches the ventricles more and increases preload**
- B. Preload equals end-systolic volume
- C. Preload is determined by heart rate
- D. Preload is independent of EDV

Preload is the initial stretch of the ventricular muscle fibers just before they contract, and it's set primarily by the end-diastolic volume—the amount of blood in the ventricle at the end of filling. When the end-diastolic volume is higher, the ventricles are more stretched when they start to contract, which increases preload. This stretch-to-force relationship underlies the Frank-Starling mechanism: up to a point, greater preload leads to a stronger contraction and a higher stroke volume. So the statement that preload is largely determined by end-diastolic volume, with higher EDV stretching the ventricles more and increasing preload, is the best description. End-systolic volume is the amount left after contraction, not preload. Heart rate can influence filling time and venous return indirectly, but preload itself is not defined by heart rate. And preload is not independent of EDV; it depends on how much blood is in the ventricle at the end of filling.

4. The phase of the cardiac cycle in which the ventricles contract is called what?

- A. Diastole
- B. Systole**
- C. Isovolumetric contraction
- D. Atrial kick

During systole, the ventricles contract, raising their pressure and pushing blood into the aorta and pulmonary artery. This is the phase of the cardiac cycle when the ventricles actively contract to eject blood. Diastole is the relaxation and filling phase, while isovolumetric contraction is the brief interval at the start of systole when the ventricles contract but no blood is yet ejected because all valves are closed. Atrial kick is the final contraction of the atria that helps complete ventricular filling during diastole. So the correct phase for ventricular contraction is systole.

5. Which heart layer is responsible for contraction and forms the muscular wall?

- A. Myocardium**
- B. Endocardium
- C. Epicardium
- D. Parietal Pericardium

The heart's muscular wall is the myocardium, the contractile layer of cardiac muscle. Its cells are connected in a network through intercalated discs and gap junctions, which lets electrical impulses sweep quickly and coordinate a strong, unified contraction to pump blood. The myocardium is especially thick in the ventricles to generate the pressure needed to push blood to the lungs and the rest of the body. The endocardium lines the interior chambers and valves, but it is not muscular. The epicardium covers the outer surface of the heart as a thin layer, and the parietal pericardium is part of the surrounding pericardial sac, not heart muscle.

6. Which factor most directly increases afterload?

- A. Heart rate
- B. Venous return
- C. Preload
- D. Aortic pressure**

Afterload is the pressure the ventricle must overcome to eject blood through the aortic valve. The factor that most directly increases this pressure load is higher aortic (arterial) pressure. When the aorta is more pressurized, the ventricle has to generate even higher systolic pressure to open the valve, so the afterload rises. This is why hypertension or increased systemic vascular resistance raises afterload and can reduce stroke volume if contractility doesn't compensate. Heart rate mainly changes cardiac output, not the pressure the ventricle must push against; venous return and preload influence the volume the ventricle stretches before contraction, not the pressure load during ejection. So the direct determinant here is arterial (aortic) pressure.

7. Which term refers to widening of the blood vessels that allows for increased blood flow?

- A. Vasodilation**
- B. Vasoconstriction
- C. Shock
- D. Hypotension

Widening of blood vessels that allows for increased blood flow is vasodilation. This happens when the smooth muscle in the walls of small arteries and arterioles relaxes, so the vessel radius increases. With a larger lumen, resistance drops and more blood can flow to tissues, improving delivery of oxygen and nutrients and aiding heat loss. Local factors (like high CO₂, low O₂, lactic acid, or inflammatory mediators) or signaling from the endothelium (such as nitric oxide) can trigger this relaxation, and it can be a targeted response in a specific tissue or occur systemically during activities like exercise or inflammation. Vasoconstriction, in contrast, narrows vessels and raises resistance, reducing flow. Shock is a condition involving inadequate perfusion that can involve various hemodynamic changes, and hypotension means abnormally low blood pressure—both outcomes or associated states rather than the term for widening.

8. Which valves close to produce S1, and which valves close to produce S2?

- A. S1 is caused by closure of the AV valves (mitral and tricuspid) at the start of systole; S2 is caused by closure of the semilunar valves (aortic and pulmonary)**
- B. S1 is caused by closure of the semilunar valves (aortic and pulmonary) at the start of systole; S2 is caused by closure of the AV valves
- C. S1 is caused by closure of the AV valves at the end of diastole; S2 by closure of the AV valves
- D. S1 is caused by closure of the AV valves at the start of systole; S2 is caused by closure of the semilunar valves

The sounds of the heart reflect valve closures and when they occur in the cardiac cycle. S1, the first sound, comes from the closure of the atrioventricular valves (the mitral and tricuspid) at the start of ventricular systole as the ventricles begin to contract and eject blood. S2, the second sound, comes from the closure of the semilunar valves (the aortic and pulmonary) at the end of systole, when the ventricles finish contracting and pressure falls, preventing backflow. So the combination that matches this timing is S1 from the AV valves at the start of systole and S2 from the semilunar valves, which is why this option is correct.

9. Which term refers to the body's ability to deliver adequate blood to tissues?

- A. Tissue perfusion**
- B. Plasma
- C. Shock
- D. Hypertension

Tissue perfusion is the body's ability to deliver adequate blood to tissues, providing oxygen and nutrients while removing wastes. This delivery depends on sufficient cardiac output, proper arterial pressure, and open microcirculation so blood can reach all cells that need it. When perfusion is adequate, tissues stay well nourished and functioning; when it's insufficient, cells become ischemic and organ function can deteriorate. Plasma is the liquid component of blood that carries nutrients, hormones, and waste products, but it isn't the process of delivering blood to tissues. Shock is a state where tissue perfusion is critically reduced, leading to organ dysfunction. Hypertension is high arterial pressure, which affects blood pressure levels but doesn't define how well tissues are being perfused.

10. Between which chambers do the atrioventricular valves reside?

- A. Between the atria and ventricles**
- B. Between the ventricles and major arteries
- C. Between the right atrium and right ventricle
- D. Between the left atrium and left ventricle

Atrioventricular valves sit between the atria and the ventricles on each side of the heart. The right-sided AV valve is the tricuspid, and the left-sided AV valve is the mitral. They open to let blood flow from the atria into the ventricles, then close to prevent backflow when the ventricles contract. This placement distinguishes them from the semilunar valves, which are between the ventricles and the major arteries. So, the AV valves reside between the atria and the ventricles.

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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:

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

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