CLINICAL SONOGRAPHY III PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://clinicalsonography3.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

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

SAMPLE

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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. Which statement is not a valid criterion for stenosis in a graft assessment?

A. 2:1 velocity increase

B. Focal velocity acceleration

C. Peak systolic velocity alone

D. Severe post-stenotic turbulence

2. How many stages are described in brain death?

A. 4

B. 6

C. 2

D. 8

3. Which plethysmography method uses a cuff around a limb that is inflated to create a volume change, which is converted to an analog pressure signal for recording?

A. Volume plethysmography

B. Photoplethysmography

C. Impedance plethysmography

D. Strain gauge plethysmography

4. Which gradient threshold is considered acceptable for inter-arm comparison in pre-op arterial evaluation?

A. Less Than 10 mmHg

B. Less Than 15 mmHg

C. Less Than 20 mmHg

D. Less Than 30 mmHg

5. Vasospasm velocity is considered normal if it is below what value?

A. <120 cm/s

B. >120 cm/s

C. 200 cm/s

D. 60 cm/s

SAMPLE

6. In the transorbital approach, which vessels are assessed?

A. ophthalmic artery and carotid siphon

B. MCA and ACA

C. Vertebral arteries

D. Basilar artery

7. Which parameter is used to indicate stenosis at a graft site?

A. Waveform width

B. Peak systolic velocity

C. Focal velocity acceleration

D. End-diastolic velocity

8. Which range defines a marginal penile/brachial index?

A. 0.75 or greater

B. 0.65-0.74

C. <0.65

D. 0.80-0.89

9. What graft connects the brachial artery to the cephalic or basilic vein? It can also connect the SFA to the saphenous vein.

A. PTFE Loop Graft

B. PTFE Straight Graft

C. Autogenous Arteriovenous Fistula

D. Dacron Loop Graft

10. What is the normal outflow time for strain gauge plethysmography?

A. 2 seconds

B. 4 seconds

C. 3 seconds

D. 5 seconds

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. Which statement is not a valid criterion for stenosis in a graft assessment?

A. 2:1 velocity increase

B. Focal velocity acceleration

C. Peak systolic velocity alone

D. Severe post-stenotic turbulence

In graft assessment, diagnosing stenosis relies on how blood flow behaves across a narrowed segment, not on a single velocity value. A true narrowing causes three telltale signs: flow accelerates at the stenosis so the peak velocity is markedly higher there, the velocity at the narrowed site compared with the pre-stenotic segment yields a velocity ratio (often about 2:1 or greater) that signals a hemodynamic gradient, and the downstream flow becomes disturbed, producing turbulence beyond the stenosis. This combination—a focal velocity rise, a substantial velocity ratio, and post-stenotic turbulence—supports the presence of a hemodynamically significant stenosis. Peak systolic velocity by itself, however, is not a reliable criterion. It can be influenced by many factors such as the angle of insonation, overall flow demands, heart function, and graft orientation, without reflecting the true severity of narrowing. Therefore, using PSV alone does not adequately define stenosis, whereas incorporating velocity ratios, focal acceleration, and post-stenotic turbulence provides a more accurate assessment.

2. How many stages are described in brain death?

A. 4

B. 6

C. 2

D. 8

Brain death is described as a progression of loss of brain function, not a single moment. In many teaching frameworks, this progression is outlined as six stages, which helps clinicians document and communicate each step toward complete brain death. The stages typically reflect a sequence from profound unconsciousness to loss of cortical activity, then loss of brainstem reflexes, followed by the inability to breathe on their own during an apnea test, and finally any necessary ancillary tests to confirm the diagnosis. Using six stages provides a structured approach that aligns with how this topic is presented in common clinical education materials, making that number the standard reference in this context.

3. Which plethysmography method uses a cuff around a limb that is inflated to create a volume change, which is converted to an analog pressure signal for recording?

A. Volume plethysmography

B. Photoplethysmography

C. Impedance plethysmography

D. Strain gauge plethysmography

Volume plethysmography uses a cuff around a limb that is inflated to create a volume change. As the limb's blood volume fluctuates with the heartbeat, the cuff's enclosed air experiences pressure changes. The cuff transducer converts those pressure changes into an analog signal that is recorded over time, producing a tracing of pulsatile volume changes. This differs from methods that rely on light absorption (photoplethysmography), electrical impedance (impedance plethysmography), or direct strain measurement of limb circumference (strain gauge plethysmography).

SAMPLE

4. Which gradient threshold is considered acceptable for inter-arm comparison in pre-op arterial evaluation?

A. Less Than 10 mmHg

B. Less Than 15 mmHg

C. Less Than 20 mmHg

D. Less Than 30 mmHg

In pre-op arterial evaluation, comparing systolic pressures between arms helps detect significant proximal disease that could affect access or perfusion. A small inter-arm gradient suggests both arms have similar proximal arterial status and is acceptable for proceeding with planned procedures. The commonly used cutoff is a gradient under 20 mmHg; differences at or below this level are considered acceptable because they are unlikely to reflect clinically meaningful stenosis. If the gradient is larger than this, it raises concern for subclavian or axillary stenosis or occlusion in the arm with the lower pressure, prompting further imaging and possible adjustment of the planned approach. In short, a difference under 20 mmHg is the threshold that supports continuing with the current pre-op evaluation.

5. Vasospasm velocity is considered normal if it is below what value?

A. <120 cm/s

B. >120 cm/s

C. 200 cm/s

D. 60 cm/s

Vasospasm causes the affected intracranial artery to narrow, so the blood must flow faster to maintain cerebral perfusion. In Doppler assessments of the middle cerebral artery, normal mean velocity is typically up to about 120 cm/s. Velocities above this threshold raise concern for vasospasm, with higher values suggesting greater severity (roughly mild around 120–140, moderate 140–200, severe >200). Therefore, a velocity below 120 cm/s is considered normal.

6. In the transorbital approach, which vessels are assessed?

A. ophthalmic artery and carotid siphon

B. MCA and ACA

C. Vertebral arteries

D. Basilar artery

The transorbital window is used to evaluate vessels that run in or near the orbit, specifically the ophthalmic artery and the intracranial segment of the internal carotid known as the carotid siphon. The ophthalmic artery travels through the orbit from the internal carotid, and the siphon represents the curved portion of the ICA as it enters the skull base, both of which can be accessed from this orbital approach. These vessels are central to assessing anterior circulation and collateral flow, carotid disease, or dissection from this view. In contrast, the MCA and ACA are typically studied through other windows, and the vertebral and basilar arteries pertain to the posterior circulation, not optimally examined via the transorbital route.

SAMPLE

7. Which parameter is used to indicate stenosis at a graft site?

A. Waveform width

B. Peak systolic velocity

C. Focal velocity acceleration

D. End-diastolic velocity

In evaluating a graft for stenosis, the most telling sign is a localized, sharp increase in flow velocity at the narrowed segment—focal velocity acceleration. This means you can identify a discrete point where the velocity rises abruptly as it passes through the constricted area, with velocity then returning to lower values beyond the lesion. This direct localization of a high-velocity jet is what points to a true stenosis. Other parameters can be affected by graft flow or downstream resistance but are less specific. Peak systolic velocity can be elevated for reasons other than a focal narrowing and doesn't by itself prove a stenosis. End-diastolic velocity reflects downstream vascular resistance more than the presence of a focal lesion. Waveform width or spectral broadening indicates turbulent flow, which can occur with stenosis but isn't as definitive as observing a focal acceleration at the lesion. In practice, you'd still compare velocities across segments and may calculate a velocity ratio to quantify stenosis, but focal velocity acceleration is the key indicator of a narrowed graft segment.

8. Which range defines a marginal penile/brachial index?

A. 0.75 or greater

B. 0.65-0.74

C. <0.65

D. 0.80-0.89

The key idea is that the penile-brachial index compares penile arterial inflow to systemic arterial pressure to assess vascular contribution to erections. A normal index means the penile blood flow is adequate. When the value is just short of that normal cutoff, it's considered marginal—this is the grey zone where flow is reduced enough to suggest possible early penile arterial disease but not yet severely compromised. It signals a vascular issue that may warrant further evaluation or management of risk factors. Values well below the normal threshold indicate definite arterial insufficiency, while values well above are normal. So the marginal range is the interval just below the normal threshold, indicating borderline penile arterial inflow.

SAMPLE

9. What graft connects the brachial artery to the cephalic or basilic vein? It can also connect the SFA to the saphenous vein.

A. PTFE Loop Graft

B. PTFE Straight Graft

C. Autogenous Arteriovenous Fistula

D. Dacron Loop Graft

The concept here is the type and configuration of a hemodialysis arteriovenous (AV) graft. When the goal is to connect a feeding artery to a nearby superficial vein (such as the brachial artery to the cephalic or basilic vein in the arm, or the superficial femoral artery to the saphenous vein in the leg), a loop graft is often used because it provides a flexible, curved path that can be tunneled subcutaneously to create accessible cannulation sites and to accommodate the anatomic distance between vessels. Polytetrafluoroethylene (PTFE) is the typical graft material for these AV loops due to its reliable handling, durability, and patency in dialysis access. The loop configuration helps avoid sharp angles and tension at the connections, reducing mechanical stress and improving usability for frequent needle cannulation. An autogenous arteriovenous fistula uses the patient's own vessels without a synthetic graft, so it's not the correct choice when a graft is specifically described. A straight graft could be used in some scenarios, but the question describes a loop form which is chosen for its advantages in bridging these vessel pairs and optimizing cannulation sites. A Dacron loop graft is similar in concept to a PTFE loop graft, but PTFE is the commonly referenced material in this context, which is why the loop PTFE graft is the best match.

10. What is the normal outflow time for strain gauge plethysmography?

A. 2 seconds

B. 4 seconds

C. 3 seconds

D. 5 seconds

Outflow time in strain gauge plethysmography is the duration it takes for the limb to return to its baseline volume after venous outflow is allowed to resume. In a healthy limb, venous drainage returns to baseline in about three seconds. This ~3-second value reflects normal venous capacitance and drainage. If the outflow time is longer, it suggests venous insufficiency or obstruction, whereas shorter times may indicate measurement artifacts or atypical physiology.

SAMPLE

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://clinicalsonography3.examzify.com

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

SAMPLE