

# ARRT Ultrasound Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

**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

<b>Copyright</b> .....	<b>1</b>
<b>Table of Contents</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>3</b>
<b>How to Use This Guide</b> .....	<b>4</b>
<b>Questions</b> .....	<b>5</b>
<b>Answers</b> .....	<b>8</b>
<b>Explanations</b> .....	<b>10</b>
<b>Next Steps</b> .....	<b>16</b>

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.

# 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

SAMPLE

- 1. Antiestrogen medication used in treating breast cancer**
  - A. Tamoxifen**
  - B. Anastrozole**
  - C. Letrozole**
  - D. Fulvestrant**
  
- 2. The Reynolds number provides insight into which aspect of flow in vessels?**
  - A. Pressure gradient**
  - B. Flow regime**
  - C. Blood viscosity**
  - D. Vessel diameter**
  
- 3. Which term encompasses both axial resolution and lateral resolution?**
  - A. Detail Resolution**
  - B. Elevation Resolution**
  - C. Far Zone**
  - D. Focal Zone**
  
- 4. Which is the most common cause of discordant growth in dichorionic gestations?**
  - A. IUGR**
  - B. TTTS**
  - C. Selective fetal growth restriction**
  - D. Placental insufficiency**
  
- 5. During the secretory phase, the endometrium is best described as which morphology?**
  - A. Thin and Proliferative**
  - B. Thickened and Glandular**
  - C. Sloughing and Irregular**
  - D. Atrophic**

- 6. Which condition is characterized by immune-mediated hydrops with Rh sensitivity and findings such as scalp edema, pleural effusion, pericardial effusion, polyhydramnios, and placentomegaly?**
- A. Immune hydrops**
  - B. Hydrops fetalis**
  - C. Nonimmune hydrops**
  - D. Placental edema**
- 7. Which term describes the average intensity across the entire beam area?**
- A. Spatial Average**
  - B. Spatial Peak**
  - C. Pulse Average**
  - D. Temporal Average**
- 8. Which property is highest in the center of the sound beam and falls off toward the periphery?**
- A. Intensity**
  - B. Frequency**
  - C. Wavelength**
  - D. Phase**
- 9. What is the term for the distance over which a pulse occurs?**
- A. Spatial**
  - B. Spatial pulse length**
  - C. Speckle**
  - D. Temporal**
- 10. Failure of the callosal fibers to form a normal connection may be partial or complete and is associated with a dilated third ventricle and outward angling of the horns. What is this condition called?**
- A. Agenesis of corpus callosum**
  - B. Hydranencephaly**
  - C. Arachnoid cyst**
  - D. Acrania**

## Answers

SAMPLE

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

SAMPLE

## **Explanations**

SAMPLE

## 1. Antiestrogen medication used in treating breast cancer

- A. Tamoxifen**
- B. Anastrozole**
- C. Letrozole**
- D. Fulvestrant**

Blocking estrogen signaling in breast tissue is a key strategy for ER-positive breast cancer. Tamoxifen acts as a selective estrogen receptor modulator, binding to the estrogen receptor in breast cells and acting as an antagonist there. This prevents estrogen from activating genes that promote tumor growth, slowing or stopping cancer progression. It's widely used as adjuvant therapy and for prevention in high-risk patients. The other drugs work differently: aromatase inhibitors like anastrozole and letrozole lower estrogen production rather than blocking the receptor, which suits postmenopausal patients but isn't the classic receptor-targeted antiestrogen in the breast. Fulvestrant degrades the estrogen receptor itself, a separate mechanism from receptor antagonism. So the best answer for an antiestrogen medication used in treating breast cancer is tamoxifen.

## 2. The Reynolds number provides insight into which aspect of flow in vessels?

- A. Pressure gradient**
- B. Flow regime**
- C. Blood viscosity**
- D. Vessel diameter**

The Reynolds number directly indicates the flow regime in a vessel—whether flow is smooth and laminar or chaotic and turbulent. It's calculated from factors like velocity, vessel diameter, density, and viscosity, and it reflects the balance between inertial forces and viscous forces. A low Reynolds number means viscous forces dominate and the flow stays orderly; a high Reynolds number means inertial forces dominate and turbulence is likely. In medical vessels, flow is usually laminar, but large vessels or high velocities can raise  $Re$  toward turbulent ranges, which can show up as spectral broadening on Doppler. So this measure tells you about the nature of the flow pattern, not directly about a pressure gradient or viscosity itself, even though viscosity is a component of the calculation.

**3. Which term encompasses both axial resolution and lateral resolution?**

- A. Detail Resolution**
- B. Elevation Resolution**
- C. Far Zone**
- D. Focal Zone**

Detail resolution is the term that captures the system's ability to distinguish fine structures in both directions: along the beam (axial) and across the beam (lateral). Axial resolution is governed by the spatial pulse length; shorter pulses (fewer cycles and higher frequency) improve axial detail by reducing the distance over which two closely spaced structures along the beam can be distinguished. Lateral resolution depends on the beam width at a given depth; focusing and higher frequency narrow the beam, improving the separation of nearby structures side by side. Taken together, these factors define the overall ability to render fine detail in an image, hence the use of detail resolution to describe both axial and lateral components. Elevation resolution refers to the third dimension, not the combination of axial and lateral. The far zone is where beam width grows after the focus, reducing resolution, and the focal zone is where lateral resolution is best but does not address axial resolution nor the overall concept of detail across directions.

**4. Which is the most common cause of discordant growth in dichorionic gestations?**

- A. IUGR**
- B. TTTS**
- C. Selective fetal growth restriction**
- D. Placental insufficiency**

Discordant growth in a dichorionic twin pregnancy most often comes from one fetus experiencing intrauterine growth restriction. Because each twin has its own placenta, problems that specifically restrict growth tend to affect only one pregnancy partner, leading to a size difference between the twins. TTTS requires shared placental circulation and occurs in monochorionic gestations, so it's not the common cause in dichorionic twins. Selective fetal growth restriction is a term heavily tied to placental sharing and vascular connections in monochorionic placentation, making it less typical here. Placental insufficiency can underlie IUGR, but the overall and most frequent presentation is IUGR of a single twin, giving rise to discordant growth between the two.

**5. During the secretory phase, the endometrium is best described as which morphology?**

- A. Thin and Proliferative**
- B. Thickened and Glandular**
- C. Sloughing and Irregular**
- D. Atrophic**

During the secretory phase, progesterone from the corpus luteum drives the endometrium to mature for potential implantation. The stroma becomes edematous and the glands enlarge and become more tortuous and secretory, producing mucus and glycogen. This combination results in a endometrium that is thicker and more glandular on imaging, which is why thickened and glandular best describes this phase. By contrast, a thin, proliferative lining reflects estrogen-driven growth before ovulation, shedding corresponds to menses, and an atrophic lining is typical of postmenopause.

**6. Which condition is characterized by immune-mediated hydrops with Rh sensitivity and findings such as scalp edema, pleural effusion, pericardial effusion, polyhydramnios, and placentomegaly?**

- A. Immune hydrops**
- B. Hydrops fetalis**
- C. Nonimmune hydrops**
- D. Placental edema**

Immune hydrops is caused by maternal antibodies against fetal red blood cells, most classically anti-D in Rh incompatibility. This alloimmune attack leads to fetal anemia and high-output heart failure, which in turn causes fluid to accumulate in multiple fetal compartments. The findings described—scalp edema and effusions in the pleural and pericardial spaces, along with polyhydramnios and placentomegaly—are classic manifestations of hydrops fetalis in its immune form. Nonimmune hydrops can produce similar signs but lacks the antibody-mediated mechanism, so the Rh-sensitive immune mechanism makes immune hydrops the best fit.

**7. Which term describes the average intensity across the entire beam area?**

- A. Spatial Average**
- B. Spatial Peak**
- C. Pulse Average**
- D. Temporal Average**

The concept being tested is how ultrasound beam energy is described across space versus time. When we talk about the energy delivered across the entire cross-sectional area of the beam, we take the average of the intensity values at all points within that area. This gives the spatial-average intensity, which reflects the overall energy distribution over the beam's cross-section rather than just a single hotspot. This is different from the spatial-peak intensity, which is simply the highest intensity found at any point in the beam. It's also different from temporal-average, which averages intensity over time (accounting for the beam being on and off), and from pulse-average, which averages intensity within a single pulse duration. So, the term that describes the average intensity across the entire beam area is spatial-average intensity.

**8. Which property is highest in the center of the sound beam and falls off toward the periphery?**

- A. Intensity**
- B. Frequency**
- C. Wavelength**
- D. Phase**

The central idea is how ultrasound energy is distributed within the beam. The energy is most concentrated along the central axis, so the intensity—power per unit area—is highest at the center. As you move away from the axis toward the edges, the beam spreads out due to diffraction and focusing, so the same amount of energy covers a larger area and the intensity decreases. Frequency and wavelength are inherent properties of the wave set by the transducer and medium and don't inherently peak at the center, and phase can vary across the beam but isn't defined by being greatest at the center. So the property that is highest in the center and falls off toward the periphery is intensity.

**9. What is the term for the distance over which a pulse occurs?**

- A. Spatial**
- B. Spatial pulse length**
- C. Speckle**
- D. Temporal**

In ultrasound, the distance a single pulse spans in tissue is called spatial pulse length. This measures how long the pulse is in space, not in time. It equals the number of cycles in the pulse multiplied by the wavelength ( $SPL = n \times \lambda$ ). Since wavelength is inversely related to frequency ( $\lambda = c/f$ ), higher frequency shortens the spatial pulse length, which can improve axial resolution but reduces penetration. So the term that best describes the distance over which the pulse occurs is spatial pulse length, because it explicitly quantifies the physical length of the pulse along the propagation path.

**10. Failure of the callosal fibers to form a normal connection may be partial or complete and is associated with a dilated third ventricle and outward angling of the horns. What is this condition called?**

**A. Agenesis of corpus callosum**

**B. Hydranencephaly**

**C. Arachnoid cyst**

**D. Acrania**

When the fibers that connect the two cerebral hemispheres fail to form a normal bridge, the brain develops agenesis or hypogenesis of the corpus callosum. Without this major commissure, the ventricular system changes: the third ventricle becomes dilated and the lateral ventricles' horns angle outward because there is no corpus callosum to keep the hemispheres aligned. This combination of a partial or complete absence of the corpus callosum with a dilated third ventricle and outwardly angled horns is characteristic of agenesis of the corpus callosum. It can occur in isolation or with other brain malformations and may be seen on ultrasound or MRI. Other conditions described—such as hydranencephaly, arachnoid cyst, or acrania—have different patterns of brain involvement and ventricle appearance, not the specific callosal absence and ventricle configuration seen here.

## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://arrtultrasound.examzify.com>**

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

SAMPLE