

Diagnostic Medical Sonography Program - Exam One: Applied II Practice (Sample)

Study Guide



Everything you need from our exam experts!

This is a sample study guide. To access the full version with hundreds of questions,

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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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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!

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Questions

- 1. What measure can indicate the presence of gallstones during an abdominal ultrasound?**
 - A. Thickened gallbladder wall**
 - B. Shadowing from calculi within the gallbladder**
 - C. Increased echogenicity of the liver**
 - D. Fluid collection around the kidneys**
- 2. In cardiac sonography, what does the term "ejection fraction" measure?**
 - A. The volume of blood in the heart at rest**
 - B. The speed of blood flow**
 - C. The percentage of blood pumped out of the heart with each heartbeat**
 - D. The thickness of the heart walls**
- 3. At what point in gestation does the trilaminar endometrium develop?**
 - A. First trimester**
 - B. Second trimester**
 - C. Late proliferative phase**
 - D. During labor**
- 4. What does a full bladder help visualize during ultrasound?**
 - A. The ovaries**
 - B. The fetal head**
 - C. The cervix**
 - D. The uterus**
- 5. What does the prefix "metra" refer to in medical terminology?**
 - A. Vagina**
 - B. Fallopian tube**
 - C. Uterus**
 - D. Ovary**

- 6. What is nuchal translucency used to assess during pregnancy?**
- A. Fetal heart rate**
 - B. Risk of chromosomal abnormalities**
 - C. Gestational diabetes**
 - D. Fetal positioning**
- 7. What vessels do LVOT and RVOT refer to?**
- A. Pulmonary artery and ascending aorta**
 - B. Descending aorta and coronary arteries**
 - C. Right atrium and left ventricle**
 - D. Aorta and vena cava**
- 8. What is the purpose of measuring the femur length in obstetric ultrasound?**
- A. To determine fetal gender**
 - B. To assess overall fetal well-being**
 - C. To estimate gestational age**
 - D. To evaluate placental position**
- 9. What implication does an elevated MSAFP typically suggest?**
- A. Fetal heart condition**
 - B. Possible fetal abnormalities or complications**
 - C. Maternal nutritional deficiency**
 - D. Normal fetal development**
- 10. What is the normal upper limit for the size of the lateral ventricle?**
- A. 15mm**
 - B. 10mm**
 - C. 8mm**
 - D. 12mm**

Answers

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

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Explanations

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1. What measure can indicate the presence of gallstones during an abdominal ultrasound?

- A. Thickened gallbladder wall**
- B. Shadowing from calculi within the gallbladder**
- C. Increased echogenicity of the liver**
- D. Fluid collection around the kidneys**

The presence of gallstones during an abdominal ultrasound is most effectively indicated by the phenomenon of shadowing from calculi within the gallbladder. When gallstones are present, they typically have a higher echogenicity compared to the surrounding tissues, leading to the production of shadowing artifacts behind them. This is characterized by an absence of echoes, or a shadow, cast beneath the stones. This contrast helps sonographers differentiate gallstones from other structures within the gallbladder itself, and the shadowing effect is a strong sonographic sign of their presence. In evaluating other potential indicators, while a thickened gallbladder wall can suggest inflammation or other gallbladder diseases, it is not a definitive sign of gallstones. Increased echogenicity of the liver is often associated with liver conditions and does not indicate gallstones. Fluid collection around the kidneys is related to different pathologies, such as hydronephrosis or renal issues, and does not provide relevant information regarding gallstones. Thus, the shadowing from calculi is the most direct and reliable ultrasound finding to confirm the presence of gallstones.

2. In cardiac sonography, what does the term "ejection fraction" measure?

- A. The volume of blood in the heart at rest**
- B. The speed of blood flow**
- C. The percentage of blood pumped out of the heart with each heartbeat**
- D. The thickness of the heart walls**

Ejection fraction is a crucial measurement in cardiac sonography that quantifies how effectively the heart pumps blood. It is expressed as a percentage and represents the amount of blood that is ejected from the ventricles with each contraction compared to the total volume of blood present in the ventricles at the end of filling (diastole). A healthy ejection fraction typically ranges from 55% to 70%, indicating that the heart is functioning well and efficiently pumping a significant portion of the blood with each beat. It is an essential parameter for assessing cardiac function and diagnosing various heart conditions, such as heart failure or cardiomyopathy. The other choices refer to different aspects of cardiac function or anatomy, but they do not accurately define ejection fraction. The volume of blood in the heart at rest relates to preload but does not convey the efficiency of the heart's pumping action. The speed of blood flow is associated with hemodynamics and vessel resistance, not specifically with ejection fraction. The thickness of the heart walls pertains to myocardial hypertrophy or structural heart disease, rather than the function of blood ejection during a heartbeat.

3. At what point in gestation does the trilaminar endometrium develop?

- A. First trimester**
- B. Second trimester**
- C. Late proliferative phase**
- D. During labor**

The trilaminar endometrium, which consists of three layers—the basal layer, the functional layer, and the spongy layer—is formed during the late proliferative phase of the menstrual cycle. This phase takes place just before ovulation within the first trimester of pregnancy. The late proliferative phase is characterized by estrogen-driven proliferation of the endometrial tissue in preparation for potential implantation of an embryo. During this period, the endometrium undergoes significant changes to support a fertilized ovum, evolving from a simple two-layer structure to the more complex trilaminar configuration. In gestation, recognizing the development of the trilaminar endometrium is key as it signifies the endometrial readiness for implantation and sustenance of a developing embryo. Understanding this phase is critical for sonographers and healthcare professionals involved in prenatal care, as it lays the foundation for subsequent stages of pregnancy and influences early placental development.

4. What does a full bladder help visualize during ultrasound?

- A. The ovaries**
- B. The fetal head**
- C. The cervix**
- D. The uterus**

A full bladder acts as an acoustic window during an ultrasound exam, enhancing the visualization of the cervix. When the bladder is distended, it moves the pelvic structures slightly and provides a clearer view of the cervix by displacing surrounding organs and tissues. This can be particularly important in obstetric evaluations to assess the cervix, especially in the context of preterm labor or cervical incompetence. In addition, a full bladder can help in the evaluation of other pelvic organs, but its primary benefit for cervical visualization is to ensure that the anatomical structures are more easily distinguishable from each other. This is crucial for accurate measurements and assessments.

5. What does the prefix "metra" refer to in medical terminology?

- A. Vagina**
- B. Fallopian tube**
- C. Uterus**
- D. Ovary**

The prefix "metra" is derived from the Greek word "metra" which specifically means "uterus." In medical terminology, the use of prefixes is important as they provide insightful context about the structures related to human anatomy. When prefixes or roots are used in medical words, they usually define the specific organ or structure being discussed. In this case, "metra" exclusively refers to the uterus, which is a muscular organ in the female reproductive system where fetal development occurs during pregnancy. This terminology is commonly seen in terms such as "endometrium" (the inner lining of the uterus) and "myometrium" (the muscular layer of the uterine wall). Understanding the origins and meanings of prefixes is essential in the field of medicine, as they help in accurately identifying medical conditions, diagnoses, and procedures related to specific organs. This makes it clear why the choice referring to the uterus is the correct one in this context.

6. What is nuchal translucency used to assess during pregnancy?

- A. Fetal heart rate**
- B. Risk of chromosomal abnormalities**
- C. Gestational diabetes**
- D. Fetal positioning**

Nuchal translucency is a specific ultrasound measurement taken during the first trimester of pregnancy, primarily around 11 to 14 weeks of gestation. This measurement assesses the thickness of the fluid collection at the back of the fetus's neck. An increased nuchal translucency measurement can indicate a higher risk of certain chromosomal abnormalities, most notably Down syndrome (trisomy 21) and other genetic conditions. This screening is typically part of a comprehensive first-trimester risk assessment, which may include combining nuchal translucency measurements with maternal age and other biochemical markers from blood tests. The purpose is to help identify pregnancies that may benefit from further diagnostic testing. In contrast, other elements mentioned such as fetal heart rate, gestational diabetes, and fetal positioning are not assessed using nuchal translucency. Fetal heart rate involves assessing the heart's function and rhythm, gestational diabetes is evaluated through blood sugar testing, and fetal positioning relates to the placement of the fetus within the uterus. Each of these assessments requires different techniques and tools beyond the scope of what nuchal translucency measures.

7. What vessels do LVOT and RVOT refer to?

- A. Pulmonary artery and ascending aorta**
- B. Descending aorta and coronary arteries**
- C. Right atrium and left ventricle**
- D. Aorta and vena cava**

The left ventricular outflow tract (LVOT) and the right ventricular outflow tract (RVOT) refer specifically to the paths that blood takes as it exits the heart from the left and right ventricles, respectively. The LVOT carries oxygenated blood from the left ventricle into the ascending aorta, which then distributes it to the rest of the body. Concurrently, the RVOT directs deoxygenated blood from the right ventricle into the pulmonary artery, leading to the lungs for oxygenation. Understanding these outflow tracts is essential in echocardiography and other imaging modalities because they are critical areas for assessing cardiac function and diagnosing possible pathologies.

8. What is the purpose of measuring the femur length in obstetric ultrasound?

- A. To determine fetal gender**
- B. To assess overall fetal well-being**
- C. To estimate gestational age**
- D. To evaluate placental position**

Measuring the femur length in obstetric ultrasound serves a crucial role in estimating gestational age. This method is particularly useful in the second and third trimesters when assessing fetal growth and development. The femur is one of the longest bones in the body, and its length correlates strongly with fetal age; as the fetus grows, so does the femur. By utilizing established reference charts based on population studies, sonographers can compare the measured femur length with expected values for particular gestational ages, providing valuable information to healthcare providers. This measurement can help in confirming or adjusting the estimated due date, which can be essential for managing the pregnancy and planning delivery. Accurate estimation of gestational age is pivotal in assessing fetal development and making clinical decisions related to prenatal care.

9. What implication does an elevated MSAFP typically suggest?

- A. Fetal heart condition**
- B. Possible fetal abnormalities or complications**
- C. Maternal nutritional deficiency**
- D. Normal fetal development**

An elevated Maternal Serum Alpha-Fetoprotein (MSAFP) level is an important marker in prenatal screening. Typically, increased levels of MSAFP suggest the potential for fetal abnormalities or complications. This is because MSAFP is produced by the fetal liver and its elevated levels in maternal blood can be associated with conditions such as neural tube defects (e.g., spina bifida, anencephaly) or abdominal wall defects (e.g., omphalocele, gastroschisis). Additionally, elevated MSAFP may indicate other issues related to fetal health, including multiple gestations or certain types of placental complications. While elevated MSAFP can prompt further testing and monitoring, it is crucial to understand that it does not confirm a diagnosis on its own; it necessitates further evaluation through targeted ultrasound or additional testing. This screening tool helps healthcare providers identify pregnancies that may require more in-depth investigation, making early intervention possible if necessary for the health of the fetus.

10. What is the normal upper limit for the size of the lateral ventricle?

- A. 15mm**
- B. 10mm**
- C. 8mm**
- D. 12mm**

The normal upper limit for the size of the lateral ventricle is typically considered to be 10mm. In pediatric patients, an enlarged lateral ventricle can indicate conditions such as hydrocephalus, which is an accumulation of cerebrospinal fluid that can cause increased intracranial pressure. Recognizing a normal upper limit helps practitioners assess ventricular size accurately during diagnostic studies like ultrasound or MRI. When considering the typical measurements of lateral ventricles, values exceeding the 10mm threshold may warrant further investigation, while measurements at or below this value are generally accepted as within the normal range for pediatric populations. Understanding these benchmarks is crucial for sonographers, as it can guide further assessments and interventions in pediatric patients.

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://exam1applied2.examzify.com>

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