

UNIVERSITY OF CENTRAL FLORIDA (UCF) ZOO3733C HUMAN ANATOMY PRACTICE EXAM 3 (SAMPLE)

STUDY GUIDE



**SAMPLE STUDY GUIDE
WITH LIMITED QUESTIONS**

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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. Which nerves are responsible for innervating the heart?**
 - A. Motor and sensory nerves
 - B. Sympathetic and parasympathetic nerves
 - C. Only sympathetic nerves
 - D. Only parasympathetic nerves
- 2. When does the color of the nipple typically darken, and what causes this change?**
 - A. During lactation due to hormonal changes
 - B. At puberty due to increased melanin production
 - C. After childbirth due to skin stretching
 - D. In the summer due to sun exposure
- 3. What type of fluid is produced by the pleura?**
 - A. Aqueous humor
 - B. Serous fluid
 - C. Synovial fluid
 - D. Pus
- 4. What condition could result from premature closure of the foramen ovale?**
 - A. Right heart hypertrophy and left side underdevelopment
 - B. Atrial hypertrophy
 - C. Pulmonary edema
 - D. Aortic regurgitation
- 5. During which phase of the cardiac cycle are the blood-filled ventricles emptied?**
 - A. Diastole
 - B. Isovolumetric relaxation
 - C. Systole
 - D. Atrial systole

- 6. Where does gas exchange occur in the lungs?**
- A. Between bronchi and bronchioles
 - B. Across the blood-air barrier
 - C. In the pleural cavity
 - D. In the trachea
- 7. The anterior and lateral cutaneous branches of the intercostal nerves provide innervation to which regions?**
- A. The back and abdomen
 - B. The anterior and lateral sides of the thorax
 - C. The upper limbs
 - D. The neck and face
- 8. What structure drains the lymphatics of the heart?**
- A. Thoracic duct
 - B. Subpericardial plexus
 - C. Left lymphatic channel
 - D. Right lymphatic channel
- 9. What occurs during the systole phase of the heartbeat?**
- A. The heart muscle relaxes
 - B. The heart muscle contracts and pumps blood
 - C. The ventricles fill with blood
 - D. The atrioventricular valves open
- 10. What is the term for the process of listening to heart sounds?**
- A. Palpation
 - B. Auscultation
 - C. Inspection
 - D. Percussion

Answers

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

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Explanations

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1. Which nerves are responsible for innervating the heart?

- A. Motor and sensory nerves
- B. Sympathetic and parasympathetic nerves**
- C. Only sympathetic nerves
- D. Only parasympathetic nerves

The nerves that innervate the heart are the sympathetic and parasympathetic nerves, which together form the autonomic nervous system's influence on cardiac function. The sympathetic nerves, originating from the thoracic spinal cord, increase heart rate and contractility during times of stress or physical activity. They release neurotransmitters like norepinephrine, which enhance cardiac output. In contrast, the parasympathetic nerves, primarily through the vagus nerve, inhibit heart rate and promote a state of rest and recovery. This system slows down the heart rate and decreases the force of contractions. The balance between these two types of innervation allows the heart to respond appropriately to varying physiological demands. This dual innervation is crucial for maintaining homeostasis and ensuring that the heart can adapt to both calm and active states. Understanding this interplay is fundamental to comprehending how cardiac function is regulated in different situations.

2. When does the color of the nipple typically darken, and what causes this change?

- A. During lactation due to hormonal changes
- B. At puberty due to increased melanin production**
- C. After childbirth due to skin stretching
- D. In the summer due to sun exposure

The darkening of the nipple's color is primarily influenced by hormonal changes, particularly during puberty and pregnancy. During puberty, the increase in hormones such as estrogen leads to a higher production of melanin in the skin, which can cause the nipple and areola to darken. This response is a natural part of breast development as the body prepares for potential future breastfeeding. Although other factors can temporarily influence skin color, such as sun exposure, they do not explain the physiological changes associated with nipple darkening as effectively as hormonal influences during significant life stages like puberty. During lactation, while hormonal changes continue to play a role, the initial darkening is more closely associated with puberty. Therefore, the hormonal changes related to increased melanin production at puberty provide the most accurate and comprehensive understanding of why this phenomenon occurs.

3. What type of fluid is produced by the pleura?

- A. Aqueous humor
- B. Serous fluid**
- C. Synovial fluid
- D. Pus

The fluid produced by the pleura is serous fluid. This fluid is essential for reducing friction between the pleurae, which are the membranes surrounding the lungs and lining the thoracic cavity. The serous fluid acts as a lubricant, allowing the lungs to glide smoothly during respiration as they expand and contract. This facilitates efficient breathing and reduces the risk of irritation or damage to the pleural surfaces. Other types of fluid, such as aqueous humor, synovial fluid, and pus, serve different functions and are produced in distinct areas of the body, but they are not associated with the pleura. Aqueous humor is found in the anterior segment of the eye, synovial fluid lubricates joint cavities, and pus is a collection of inflammatory cells resulting from infection. Understanding the specific role of serous fluid helps clarify its importance in the respiratory system and pleural function.

4. What condition could result from premature closure of the foramen ovale?

A. Right heart hypertrophy and left side underdevelopment

B. Atrial hypertrophy

C. Pulmonary edema

D. Aortic regurgitation

The condition resulting from the premature closure of the foramen ovale is right heart hypertrophy and left side underdevelopment. The foramen ovale is an important shunt during fetal development that allows blood to bypass the non-functioning lungs, directing it from the right atrium to the left atrium. If the foramen ovale closes too early, this can create a situation where blood flow is impeded. The right side of the heart has to work harder to pump blood into systemic circulation without the normal reduction in flow it typically experiences due to the shunt. This leads to right heart hypertrophy as the right ventricle develops muscle mass to accommodate the increased workload. At the same time, the left atrium and left ventricle may not receive sufficient blood flow, causing underdevelopment. This underdevelopment can lead to a reduced capacity to pump blood effectively to the rest of the body, especially during critical growth periods in infancy. Thus, option A accurately describes the physiological consequences of premature closure of the foramen ovale.

5. During which phase of the cardiac cycle are the blood-filled ventricles emptied?

A. Diastole

B. Isovolumetric relaxation

C. Systole

D. Atrial systole

During the cardiac cycle, the phase in which the blood-filled ventricles are emptied is known as systole. This phase involves the contraction of the heart muscle, specifically the ventricles, which leads to the expulsion of blood into the pulmonary artery and aorta. During systole, electrical impulses from the heart (initiated by the sinoatrial node) trigger the ventricles to contract forcefully, decreasing their volume and increasing intracavitary pressure, allowing blood to be pumped out. This is a crucial part of circulation, ensuring that oxygenated blood reaches the body's tissues and organs while deoxygenated blood is directed to the lungs for oxygenation. In contrast, the other phases such as diastole focus on the filling of the ventricles with blood, isovolumetric relaxation is the period after ventricular contraction before the heart fills again, and atrial systole refers to the contraction of the atria to push additional blood into the ventricles. Only during systole does the active expulsion of blood from the ventricles occur, making it the correct answer.

6. Where does gas exchange occur in the lungs?

- A. Between bronchi and bronchioles
- B. Across the blood-air barrier**
- C. In the pleural cavity
- D. In the trachea

Gas exchange in the lungs specifically occurs across the blood-air barrier, which consists of the alveolar epithelium and the endothelium of the capillaries. This barrier is exceptionally thin, allowing for efficient diffusion of oxygen from the alveoli into the blood in the capillaries, while simultaneously enabling carbon dioxide to move from the blood into the alveoli to be exhaled. The design of the alveoli, with their large surface area and moist lining, further facilitates this crucial exchange process. The other options involve parts of the respiratory system that are important for air conduction and protection but are not directly involved in the transfer of gases. For instance, the bronchi and bronchioles serve primarily as passageways for air rather than sites for gas exchange. The pleural cavity is the space between the two pleurae surrounding the lungs and helps with lung inflation but does not participate in gas exchange. The trachea functions as a major airway transporting air to and from the lungs but likewise does not engage in gas exchange. Thus, the blood-air barrier is indeed the correct location where gas exchange occurs in the lungs.

7. The anterior and lateral cutaneous branches of the intercostal nerves provide innervation to which regions?

- A. The back and abdomen
- B. The anterior and lateral sides of the thorax**
- C. The upper limbs
- D. The neck and face

The anterior and lateral cutaneous branches of the intercostal nerves specifically innervate the skin on the anterior and lateral aspects of the thorax. The intercostal nerves originate from the thoracic spinal nerves and travel along the ribs, providing sensory innervation to the skin in these regions. The anterior cutaneous branches primarily supply the skin over the sternum and nearby structures, while the lateral cutaneous branches extend laterally, innervating the skin on the sides of the thorax. This distribution is consistent with the anatomical arrangement of the intercostal nerves and their branches, which aim to supply sensation to the thoracic wall, a critical area for various functions including respiration and protecting underlying structures.

8. What structure drains the lymphatics of the heart?

- A. Thoracic duct
- B. Subpericardial plexus**
- C. Left lymphatic channel
- D. Right lymphatic channel

The subpericardial plexus is the structure responsible for draining the lymphatics of the heart. This plexus is located within the pericardial sac and consists of a network of lymphatic vessels that collect lymphatic fluid from the myocardium and the pericardium. This drainage system is essential for maintaining fluid balance and facilitating immune responses within the cardiac environment. The lymph collected ultimately drains into the larger lymphatic vessels, eventually contributing to the thoracic duct. The subpericardial plexus is specifically adapted to the anatomical position and functional requirements of the heart, making it the primary structure for its lymphatic drainage. The other choices refer to larger or different lymphatic structures that do not directly serve the heart's lymphatic drainage. The thoracic duct is the main lymphatic vessel in the body but serves a much broader area beyond just the heart. The left and right lymphatic channels are also larger vessels that collect lymph from other regions and do not specifically drain the lymphatics of the heart like the subpericardial plexus does.

9. What occurs during the systole phase of the heartbeat?

- A. The heart muscle relaxes
- B. The heart muscle contracts and pumps blood**
- C. The ventricles fill with blood
- D. The atrioventricular valves open

During the systole phase of the heartbeat, the heart muscle contracts, which is essential for pumping blood throughout the body. This phase is characterized by the contraction of the ventricles, which forces blood into the aorta and pulmonary artery. The heart's contraction generates the pressure needed to circulate blood to the organs and tissues, ensuring they receive the oxygen and nutrients required for proper functioning. In contrast to this, the other choices refer to different phases or states of the cardiac cycle. For example, relaxation of the heart muscle occurs during diastole, when the heart chambers fill with blood. Atrioventricular valves opening is also part of the diastolic phase when the heart is preparing for the next contraction, allowing blood to flow into the ventricles. Thus, the focus of systole is indeed on contraction and the active phase of the heartbeat, highlighting why the selected answer correctly identifies this critical function.

10. What is the term for the process of listening to heart sounds?

- A. Palpation
- B. Auscultation**
- C. Inspection
- D. Percussion

The process of listening to heart sounds is called auscultation. This method involves using a stethoscope to amplify and clarify the sounds made by the heart, such as normal heartbeats and any abnormal sounds like murmurs or irregular rhythms. Auscultation is a critical component of a physical examination, allowing healthcare providers to assess the heart's function and detect potential cardiovascular issues. It relies on the principle that sound waves produced by the heart can be transmitted through the body, allowing for diagnostic insights without invasive procedures. Other terms in the options refer to different assessment techniques: palpation involves feeling the body with hands to assess conditions like pulse and tenderness, inspection refers to visually examining the body for signs of disease or abnormalities, and percussion involves tapping on the body to determine the underlying structure by the sound produced. These techniques serve their unique purposes in clinical evaluation but do not involve the auditory assessment provided by auscultation.

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.

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

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