

RUTGERS ANATOMY & PHYSIOLOGY TEST PRACTICE (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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 structure is not part of the meninges?**
 - A. Pia mater
 - B. Arachnoid mater
 - C. Cerebrospinal fluid
 - D. Dura mater
- 2. What classification of anatomy focuses on the study of organs and structures?**
 - A. Physiological anatomy
 - B. Regional anatomy
 - C. Systematic anatomy
 - D. Microscopic anatomy
- 3. A section that divides the body into anterior and posterior portions is known as?**
 - A. Transverse
 - B. Frontal/coronal
 - C. Sagittal
 - D. Oblique
- 4. What is the primary function of rod cells in the retina?**
 - A. Color vision
 - B. Low-light vision
 - C. Detail vision
 - D. Depth perception
- 5. What causes hair to turn gray or white?**
 - A. Excessive oil
 - B. Loss of pigment and air bubbles in the medulla
 - C. Genetic predisposition
 - D. Environmental damage

- 6. Which part of the brain is crucial for coordinating voluntary muscle movement?**
- A. Cerebrum
 - B. Cerebellum
 - C. Brainstem
 - D. Thalamus
- 7. What gland's secretion, along with bacteria, is primarily responsible for body odor?**
- A. Merocrine glands
 - B. Apocrine glands
 - C. Endocrine glands
 - D. Sebaceous glands
- 8. Which epidermal layer contains a single layer of mitotically active columnar cells?**
- A. Stratum corneum
 - B. Stratum granulosum
 - C. Stratum spinosum
 - D. Stratum basale
- 9. Rheumatic diseases that affect synovial joints typically result in the development of?**
- A. Osteoarthritis
 - B. Arthritis
 - C. Tendinitis
 - D. Bursitis
- 10. What is the name of the inferiormost part of the sternum?**
- A. Manubrium
 - B. Body
 - C. Xiphoid process
 - D. Sternal angle

Answers

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

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Explanations

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1. Which structure is not part of the meninges?

- A. Pia mater
- B. Arachnoid mater
- C. Cerebrospinal fluid**
- D. Dura mater

The correct answer is cerebrospinal fluid, as it is not considered one of the three layers of the meninges. The meninges are protective membranes that surround the brain and spinal cord, providing both support and protection to these vital structures. The three layers that make up the meninges are the pia mater, arachnoid mater, and dura mater. The pia mater is the innermost layer that is delicate and closely adheres to the surface of the brain and spinal cord. The arachnoid mater is the middle layer, which provides a web-like structure that helps support the central nervous system. The dura mater is the tough outermost layer that acts as a protective barrier against potential injury. Cerebrospinal fluid, on the other hand, is a clear fluid found in the space between the arachnoid mater and the pia mater known as the subarachnoid space. Its primary function is to cushion the brain, provide buoyancy, and circulate nutrients, which is why it is closely associated with the meninges but is not a structural component of them.

2. What classification of anatomy focuses on the study of organs and structures?

- A. Physiological anatomy
- B. Regional anatomy
- C. Systematic anatomy**
- D. Microscopic anatomy

Systematic anatomy is the classification that specifically focuses on the study of organs and structures in a methodical way, often organized by body systems. This type of anatomy examines the structures of specific organ systems, such as the cardiovascular, respiratory, and digestive systems, providing a detailed understanding of how those organs and their components work together within their respective systems. This approach is beneficial for understanding how various anatomical parts interact with one another within a defined context. For instance, when studying the circulatory system, one would explore the heart, blood vessels, and blood, highlighting their structure and functionality as part of the system's overall operation. This systematic approach provides clarity in studying anatomy, allowing one to appreciate the relationships and functions of different organs and structures within the same system. In contrast, physiological anatomy tends to emphasize the functional aspects of anatomy, regional anatomy focuses on specific areas of the body and their structures, while microscopic anatomy involves the study of cells and tissues under a microscope, rather than the larger organs themselves. Each of these classifications has its unique focus and methods, but systematic anatomy is particularly centered on the organization and interaction of complete organ systems.

3. A section that divides the body into anterior and posterior portions is known as?

- A. Transverse
- B. Frontal/coronal**
- C. Sagittal
- D. Oblique

The correct term for a section that divides the body into anterior (front) and posterior (back) portions is referred to as the frontal or coronal plane. This plane runs vertically from side to side and enables the separation of the body into front and back sections. Understanding anatomical planes helps in various fields, such as medicine and biology, as it allows for the clear communication of location and direction in the human body. The frontal plane is particularly useful in describing movements or positions regarding the anterior and posterior aspects of the body, which is crucial during physical examinations, surgeries, or anatomical studies. Other planes like the transverse plane, which divides the body into superior (upper) and inferior (lower) portions, and the sagittal plane, which divides the body into left and right sides, serve different anatomical purposes. The oblique plane, on the other hand, is any plane that is not parallel to one of the primary anatomical planes and is used less commonly for standard anatomical descriptions.

4. What is the primary function of rod cells in the retina?

- A. Color vision
- B. Low-light vision**
- C. Detail vision
- D. Depth perception

The primary function of rod cells in the retina is indeed focused on low-light vision. Rod cells are photoreceptor cells that are highly sensitive to light, allowing them to function effectively in dim lighting conditions. They do not detect color, which distinguishes them from cone cells that are responsible for color vision. Rods are also less effective at distinguishing fine details compared to cones, which are crucial for sharp vision and detail perception. In low-light environments, rods accumulate a pigment called rhodopsin that enables them to detect even small amounts of light. This ability makes them essential for night vision or for vision in dark environments. As a result, when light levels decrease, the activity of rod cells increases, allowing us to perceive our surroundings despite the lack of bright light. The other options relate to functions that involve the cone cells or other aspects of vision that are not primarily managed by rod cells. Color vision and detail vision rely on the presence and functionality of cone cells, which are abundant in well-lit conditions. Depth perception involves the integration of visual information from both eyes and the processing of that information in the brain, rather than being specifically tied to the function of rod cells.

5. What causes hair to turn gray or white?

- A. Excessive oil
- B. Loss of pigment and air bubbles in the medulla**
- C. Genetic predisposition
- D. Environmental damage

Hair turns gray or white primarily due to a loss of pigment in the hair follicle. The color of hair is determined by the presence of melanin, which is produced by melanocytes located in the hair bulb. As people age, the melanocytes gradually decrease in number or cease to function, leading to a reduction in melanin production. This lack of pigment results in hair becoming gray or white. Additionally, the presence of air bubbles in the medulla, the innermost layer of the hair shaft, can contribute to the change in appearance. When the melanocytes stop producing pigment and air becomes trapped in the medulla, it can make the hair appear lighter, further contributing to the graying process. While genetic predisposition may influence the age at which hair turns gray, the core mechanism involves the loss of pigment and the introduction of air into the hair structure itself. The combination of these factors leads to the gray or white appearance of hair as people age.

6. Which part of the brain is crucial for coordinating voluntary muscle movement?

- A. Cerebrum
- B. Cerebellum**
- C. Brainstem
- D. Thalamus

The cerebellum is essential for coordinating voluntary muscle movements because it integrates sensory information from the body and the environment to fine-tune motor actions. It plays a pivotal role in balance, posture, and the precision of movements. When you plan a voluntary movement, the cerebellum works quickly to adjust and refine those movements based on feedback, allowing for smooth and coordinated actions. For instance, when you throw a ball, the cerebellum helps ensure that your muscles work together efficiently, maintaining your balance and providing the necessary force and direction. It does this by processing information from various sensory systems and relaying the appropriate signals to the muscles. This is why damage to the cerebellum often results in ataxia—a lack of voluntary coordination, which demonstrates its critical role in motor control. The other brain parts mentioned have different functions: the cerebrum manages higher brain functions such as thought and voluntary movement initiation, the brainstem regulates involuntary actions and basic life functions, and the thalamus acts mainly as a relay station for sensory information.

7. What gland's secretion, along with bacteria, is primarily responsible for body odor?

- A. Merocrine glands
- B. Apocrine glands**
- C. Endocrine glands
- D. Sebaceous glands

The apocrine glands are primarily responsible for the secretion that contributes to body odor, particularly in areas such as the armpits and groin. These glands become active during puberty and secrete a milky fluid that, when broken down by skin bacteria, produces the characteristic odor associated with sweat. Unlike merocrine glands, which primarily produce a watery form of sweat for thermoregulation, apocrine secretions are thicker and contain proteins and lipids that serve as a food source for bacteria on the skin. This process of bacterial decomposition leads to body odor. Endocrine glands, on the other hand, release hormones directly into the bloodstream and do not contribute to body odor. Sebaceous glands secrete sebum, an oily substance that helps to lubricate the skin and hair but does not directly cause body odor. Therefore, the role of apocrine glands in secretion and their interaction with skin bacteria is crucial for understanding body odor production.

8. Which epidermal layer contains a single layer of mitotically active columnar cells?

- A. Stratum corneum
- B. Stratum granulosum
- C. Stratum spinosum
- D. Stratum basale**

The stratum basale is the deepest layer of the epidermis and is comprised of a single layer of mitotically active columnar or cuboidal cells. These cells are primarily responsible for the production of new keratinocytes, which will eventually move up through the layers of the epidermis, undergoing differentiation and keratinization. The presence of mitotically active cells is critical for the continuous renewal of the skin, as they ensure the replacement of cells that are shed from the surface of the skin. This layer also contains melanocytes, which produce the pigment melanin, contributing to skin color and protection from UV radiation. Additionally, it includes Merkel cells, which are involved in touch sensation. The stratum basale is essential for maintaining the integrity and health of the epidermis, ensuring that the outer layers of skin are populated with fresh, healthy cells. The other layers mentioned do not have the same characteristics; the stratum corneum, for instance, is composed of dead, keratinized cells and does not have mitotically active cells. The stratum granulosum contains keratinocytes that are undergoing the process of keratinization, while the stratum spinosum has keratinocytes that are in an earlier stage of

9. Rheumatic diseases that affect synovial joints typically result in the development of?

- A. Osteoarthritis
- B. Arthritis**
- C. Tendinitis
- D. Bursitis

Rheumatic diseases that affect synovial joints primarily lead to arthritis. This term encompasses a group of conditions that cause inflammation of the joints, resulting in symptoms such as pain, swelling, and stiffness. The inflammation is often due to an autoimmune response, where the body's immune system mistakenly attacks joint tissues. Arthritis is distinct from other options in that it specifically refers to inflammation of the joints, which is characteristic of various rheumatic diseases like rheumatoid arthritis, psoriatic arthritis, and gout. Unlike osteoarthritis, which is more about wear and tear on the joints typically related to aging, arthritis directly involves inflammatory processes. Conditions like tendinitis and bursitis affect different structures associated with joints. Tendinitis refers to the inflammation of tendons, while bursitis involves inflammation of the bursa, small fluid-filled sacs that cushion joints. Both of these conditions can be caused by overuse or trauma but are not classified under the primary effects of rheumatic diseases impacting the synovial joint itself. Therefore, the correct answer emphasizes the inflammatory nature and direct impact on synovial joints caused by rheumatic diseases.

10. What is the name of the inferiormost part of the sternum?

- A. Manubrium
- B. Body
- C. Xiphoid process**
- D. Sternal angle

The inferiormost part of the sternum is called the xiphoid process. This small, cartilaginous structure eventually becomes ossified in adulthood and serves as an important anatomical landmark. Its location at the bottom of the sternum has significance as it provides attachment for abdominal muscles and the diaphragm. The xiphoid process is essential for identifying areas on the body for CPR and other medical procedures, as well as being a point of reference for the lower margins of the thoracic cavity. In contrast, the manubrium is the upper part of the sternum, the body is the central portion, and the sternal angle is where the manubrium meets the body, which is more of a functional angle rather than a physical part of the sternum itself. Thus, the xiphoid process is accurately identified as the lowest part of the sternum.

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://rutgersanatomyphysiology.examzify.com>

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

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