RUTGERS ANATOMY & PHYSIOLOGY II PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED 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.

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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!

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Questions

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1. Which hormones are secreted by the anterior lobe of the pituitary gland?

A. Thyroid hormone and cortisol

B. Insulin and glucagon

C. Growth hormone and luteinizing hormone

D. Adrenaline and norepinephrine

2. What type of immunity is acquired as a result of developing the disease?

A. Naturally acquired passive immunity

B. Naturally acquired active immunity

C. Artificially acquired active immunity

D. Artificially acquired passive immunity

3. What is the difference between innate defenses and adaptive defenses against infection?

A. Innate defenses respond to specific pathogens

B. Adaptive defenses guard against all pathogens

C. Innate defenses guard against pathogens; adaptive defenses respond to specific pathogens

D. Adaptive defenses are permanent and non-specific

4. What is the primary function of secretions from the prostate gland?

A. Activate sperm and neutralize urine

B. Provide nutrients to the epididymis

C. Regulate testosterone levels

D. Increase the volume of semen

5. Cytotoxic T cells primarily target which of the following?

A. Bacteria and fungi

B. Cancer and virus containing cells

C. Healthy cells

D. Autoimmune cells

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6. What is the relationship between the patellar and femoral regions?

A. The patellar region is medial to the femoral region.
B. The patellar region is superior to the femoral region.
C. The patellar region is distal to the femoral region.
D. The patellar region is proximal to the femoral region.

7. What hormone is primarily responsible for ovulation?

A. Luteinizing hormone (LH)
B. Follicle-stimulating hormone (FSH)
C. Estrogen
D. Progesterone

8. Which blood vessel carries oxygenated blood from the lungs to the heart?

A. Pulmonary artery
B. Aorta
C. Pulmonary vein
D. Coronary vein

9. What stimulates blood vessel spasms following an injury?

A. Histamine released from mast cells
B. Serotonin released from platelets
C. Prostaglandins released from damaged tissues
D. Bradykinin released from blood plasma

10. When the alleles of a gene pair are different, how are they described?

A. Homozygous
B. Heterozygous
C. Recessive
D. Dominant

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Answers

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

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Explanations

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1. Which hormones are secreted by the anterior lobe of the pituitary gland?

A. Thyroid hormone and cortisol

B. Insulin and glucagon

C. Growth hormone and luteinizing hormone

D. Adrenaline and norepinephrine

The hormones secreted by the anterior lobe of the pituitary gland play crucial roles in regulating several physiological processes in the body. Growth hormone is important for growth, metabolism, and overall bodily function, influencing tissues and organs to grow and develop. Luteinizing hormone is vital in regulating the reproductive system, stimulating ovulation in females and testosterone production in males. These hormones are produced and released by the anterior pituitary gland, which is a key part of the endocrine system and is responsible for secreting several hormones that control various bodily functions. The correct response highlights the significant roles of growth hormone and luteinizing hormone in growth and reproductive health. The other choices mention hormones that are produced by different glands or have different functions than those associated with the anterior pituitary. For example, thyroid hormone and cortisol are secreted by the thyroid and adrenal glands, respectively, while insulin and glucagon are produced by the pancreas. Adrenaline and norepinephrine are hormones produced by the adrenal medulla and are primarily involved in the body's 'fight or flight' response. Each of these hormones has its distinct regulatory roles and origins, making the identification of anterior pituitary hormones important for understanding endocrine function.

2. What type of immunity is acquired as a result of developing the disease?

A. Naturally acquired passive immunity

B. Naturally acquired active immunity

C. Artificially acquired active immunity

D. Artificially acquired passive immunity

The correct answer is that the type of immunity acquired as a result of developing the disease is naturally acquired active immunity. This immunity occurs when an individual's immune system responds to a pathogen after being infected. During this process, the body produces antibodies and memory cells that provide long-lasting protection against future infections from the same pathogen. When someone contracts a disease, their immune system actively engages with the pathogen, recognizing and remembering it. This active engagement leads to the development of specific defenses, such as antibodies that will be mobilized if the pathogen re-enters the body. This is why this form of immunity is termed "active" – the individual's immune response is stimulated directly by the pathogen. In contrast, other types of immunity presented in the options refer to different mechanisms of acquiring protection. For example, naturally acquired passive immunity involves the transfer of antibodies from one individual to another (such as from mother to infant through breast milk) without the recipient's immune system actively engaging with the pathogen. Artificially acquired active immunity involves vaccination, where a harmless form of the pathogen is introduced to stimulate an immune response without causing the disease itself. Meanwhile, artificially acquired passive immunity involves the transfer of antibodies (like serum or immunoglobulin injections) from another individual or animal, which does

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3. What is the difference between innate defenses and adaptive defenses against infection?

A. Innate defenses respond to specific pathogens

B. Adaptive defenses guard against all pathogens

C. Innate defenses guard against pathogens; adaptive defenses respond to specific pathogens

D. Adaptive defenses are permanent and non-specific

The distinction between innate and adaptive defenses is crucial in immunology and understanding how the body protects itself from infections. Innate defenses are the body's first line of defense against pathogens and are characterized as non-specific. This means they respond to a wide range of threats, rather than targeting specific pathogens. The components of innate defenses include physical barriers like skin and mucous membranes, as well as various immune cells that act quickly to eliminate or contain pathogens the body encounters. In contrast, adaptive defenses are highly specific and involve a tailored response to specific pathogens. The adaptive immune system learns and remembers the specific invaders it has encountered, leading to a more effective and faster response upon subsequent exposures to the same pathogen. Adaptive defenses include the activation of lymphocytes (B cells and T cells), which produce antibodies and enhance the immune response specifically against the pathogen previously encountered. The correct explanation captures the essence of how innate defenses provide broad protection against infections while adaptive defenses are specifically tailored responses to particular pathogens. This interplay between the two systems ensures a comprehensive immune response, where innate defenses act immediately and adaptive defenses provide a more focused and prolonged response.

4. What is the primary function of secretions from the prostate gland?

A. Activate sperm and neutralize urine

B. Provide nutrients to the epididymis

C. Regulate testosterone levels

D. Increase the volume of semen

The main function of secretions from the prostate gland is to activate sperm and neutralize urine. The prostate gland produces a fluid that makes up a significant portion of semen, contributing to the overall volume and providing an optimal environment for sperm function. This fluid contains enzymes, citric acid, and other substances that help to nourish sperm and inhibit the growth of bacteria, creating a more favorable condition for sperm viability and motility. Moreover, the prostate secretions help to neutralize the acidic environment of the female vagina, ensuring that sperm can swim effectively towards the egg for fertilization. Neutralizing urine is also crucial because the urethra serves a dual purpose in males—it carries both urine and semen. Therefore, the prostate's secretions significantly enhance the functionality and survival rate of sperm, which is why this option is considered the primary function of the prostate gland's secretions. The other choices do not represent the main role of the prostate gland. For instance, while nutrients are important for sperm maturation, the epididymis is primarily responsible for storing and maturing sperm, not the prostate. Testosterone regulation is mainly managed by the testes and other endocrine factors, and while prostate secretions do contribute to the overall volume of semen, their primary role is

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5. Cytotoxic T cells primarily target which of the following?

A. Bacteria and fungi

B. Cancer and virus containing cells

C. Healthy cells

D. Autoimmune cells

Cytotoxic T cells, also known as cytotoxic T lymphocytes (CTLs), play a crucial role in the adaptive immune response, particularly in targeting and eliminating infected or abnormal cells. They are most effective against cells that are either infected with viruses or have become cancerous. This is because these cells present abnormal peptides on their surface, typically derived from viral proteins or mutated proteins associated with cancer, through major histocompatibility complex (MHC) class I molecules. When a cytotoxic T cell recognizes a foreign antigen presented by an infected or cancerous cell, it binds to the MHC-antigen complex, leading to the activation of the cytotoxic T cell. Following activation, these T cells release perforin and granzymes that induce apoptosis (programmed cell death) in the target cells. This targeted approach helps to control the spread of infection and eliminate potentially malignant cells. In contrast, cytotoxic T cells do not typically target healthy cells, as these cells usually do not present abnormal antigens in the context of MHC class I molecules. Likewise, while some immune responses involve other types of white blood cells responding to bacteria and fungi (often involving helper T cells and B cells), cytotoxic T cells are specialized for dealing with intracellular

6. What is the relationship between the patellar and femoral regions?

A. The patellar region is medial to the femoral region.

B. The patellar region is superior to the femoral region.

C. The patellar region is distal to the femoral region.

D. The patellar region is proximal to the femoral region.

The patellar region refers to the area of the knee, specifically where the kneecap (patella) is located, while the femoral region pertains to the area of the thigh, where the femur bone is situated. The relationship between these two regions can be defined by their anatomical positions relative to each other. The correct answer highlights that the patellar region is distal to the femoral region. In anatomical terms, "distal" indicates a location that is farther from the point of attachment or the trunk of the body. Since the patella is found below the femur (knee), it is indeed classified as distal to the femoral region. This hierarchical understanding of body structures is essential in the study of anatomy, as it provides clarity regarding the arrangement of different body parts. Considering the other options, they imply either an incorrect positioning or a misunderstanding of anatomical terminology regarding their relative locations. Understanding these positional terms is crucial for accurately describing relationships in anatomy.

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7. What hormone is primarily responsible for ovulation?

A. Luteinizing hormone (LH)

B. Follicle-stimulating hormone (FSH)

C. Estrogen

D. Progesterone

Luteinizing hormone (LH) is the key hormone responsible for triggering ovulation in the female reproductive cycle. LH is produced by the anterior pituitary gland, and its surge occurs in response to rising estrogen levels during the follicular phase of the menstrual cycle. This surge signals the mature ovarian follicle to release an egg, marking the point of ovulation. In the context of the menstrual cycle, the critical role of LH becomes evident during the mid-cycle peak, where it induces the final maturation of the ovarian follicle and promotes the release of the egg into the fallopian tube. This biological process is essential for reproduction as it allows for the possibility of fertilization if sperm is present. The other hormones mentioned contribute to different aspects of the menstrual cycle but do not directly trigger ovulation. Follicle-stimulating hormone (FSH) promotes follicle development and stimulates the ovaries to produce estrogen, while estrogen itself plays a key role in regulating the menstrual cycle and preparing the uterine lining, but is not the hormonal trigger for ovulation. Progesterone, released after ovulation, helps prepare the uterine lining for potential implantation. Thus, while FSH, estrogen, and progesterone are important in the overall reproductive process,

8. Which blood vessel carries oxygenated blood from the lungs to the heart?

A. Pulmonary artery

B. Aorta

C. Pulmonary vein

D. Coronary vein

The blood vessel that carries oxygenated blood from the lungs to the heart is the pulmonary vein. After the process of gas exchange in the alveoli of the lungs, oxygen-rich blood enters the pulmonary veins, which transport this oxygenated blood back to the left atrium of the heart. This is a key element of the pulmonary circulation. It contrasts with the pulmonary artery, which carries deoxygenated blood away from the heart to the lungs, and the aorta, which distributes oxygenated blood from the heart to the rest of the body. The coronary vein is involved in draining deoxygenated blood from the heart muscle itself, returning it to the circulation, but is not responsible for carrying oxygenated blood from the lungs. Understanding these pathways is crucial for grasping the overall function of the cardiovascular system.

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9. What stimulates blood vessel spasms following an injury?

A. Histamine released from mast cells

B. Serotonin released from platelets

C. Prostaglandins released from damaged tissues

D. Bradykinin released from blood plasma

Blood vessel spasms following an injury are primarily stimulated by serotonin, which is released from platelets during the process of hemostasis. When a blood vessel is damaged, platelets adhere to the exposed collagen fibers and become activated, releasing several substances, including serotonin. This release leads to vasoconstriction, or the narrowing of the blood vessels, which helps to reduce blood loss at the injury site. Serotonin acts directly on the smooth muscle of blood vessel walls, promoting immediate vasospasm that occurs shortly after injury. This rapid constriction is crucial for initial hemostatic response, allowing the body to minimize blood loss and setting the stage for further repair processes. In contrast, while histamine, prostaglandins, and bradykinin play roles in inflammation and other aspects of tissue repair, they are not primarily responsible for initiating vessel spasms in immediate response to injury. Histamine generally causes vasodilation and increases vascular permeability, prostaglandins have various effects including pain and inflammation, and bradykinin leads to vasodilation and increased permeability as well. Their roles come into play later in the healing process rather than at the immediate onset of vessel injury.

10. When the alleles of a gene pair are different, how are they described?

A. Homozygous

B. Heterozygous

C. Recessive

D. Dominant

When the alleles of a gene pair are different, they are described as heterozygous. This term derives from the Greek prefix "hetero," meaning different, and "zygos," meaning yoke or pair. In a heterozygous configuration, one allele may be dominant while the other is recessive, but what defines this state is the presence of two different alleles at the same locus on homologous chromosomes. This genetic variation can lead to different expressions of traits or characteristics, depending on the dominance relationships between the alleles. For instance, if one allele codes for brown eyes and the other for blue eyes, a heterozygous individual will exhibit the characteristic associated with the dominant allele, which in this example would be brown eyes. Homozygous refers to when the alleles are the same, either both dominant or both recessive. Recessive and dominant signify the behavior of alleles in terms of their expression rather than describing the configuration of the alleles themselves. Thus, the terminology used here is specific to the allelic configuration, making heterozygous the appropriate choice when discussing different alleles of a gene pair.

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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:

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

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