

# Rutgers Anatomy & Physiology II Practice Exam (Sample)

## Study Guide



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

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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

- 1. Which of the following substances is not necessary for the formation of a blood clot?**
  - A. Albumin**
  - B. Blood platelets**
  - C. Tissue thromboplastin**
  - D. Fibrinogen**
- 2. What distinguishes the spleen from lymph nodes?**
  - A. The spleen filters lymph**
  - B. The spleen filters blood**
  - C. The spleen produces antibodies**
  - D. The spleen is larger in size**
- 3. What type of reaction occurs if an Rh-negative mother carries an Rh-positive child without treatment?**
  - A. Blood clotting disorder**
  - B. Rh sensitivity reaction**
  - C. Immune suppression**
  - D. Acute allergic reaction**
- 4. Which hormone is responsible for stimulating cells to increase in size and divide more frequently?**
  - A. Insulin**
  - B. Growth hormone**
  - C. Cortisol**
  - D. Thyroid hormone**
- 5. 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**

- 6. What are homologous pairs of chromosomes?**
- A. Chromosomes from the mother and father that contain similar genetic information**
  - B. Chromosomes that are identical in shape and size**
  - C. Chromosomes that undergo mutations during cell division**
  - D. Chromosomes that are only present in males**
- 7. Which of the following is a function of bile?**
- A. Digestion of proteins**
  - B. Emulsification of fats**
  - C. Absorption of vitamins**
  - D. Secretion of hormones**
- 8. What factor contributes to the accumulation of lymph?**
- A. Increased vascular resistance**
  - B. Decreased metabolic rate**
  - C. Increased osmotic pressure in tissue fluid**
  - D. Reduced lymphocyte production**
- 9. A lymphatic obstruction can lead to which of the following conditions?**
- A. High blood pressure**
  - B. Infection**
  - C. Edema**
  - D. Blood clots**
- 10. Which type of blood has no agglutinin?**
- A. Type O**
  - B. Type A**
  - C. Type B**
  - D. Type AB**



## **Answers**

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

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## **Explanations**

**1. Which of the following substances is not necessary for the formation of a blood clot?**

- A. Albumin**
- B. Blood platelets**
- C. Tissue thromboplastin**
- D. Fibrinogen**

Albumin is a protein in the blood that plays a crucial role in maintaining osmotic pressure and transporting various substances, but it is not directly involved in the clotting process. The formation of a blood clot primarily requires blood platelets, tissue thromboplastin, and fibrinogen. Blood platelets, also known as thrombocytes, are essential for initiating the clotting process by adhering to the site of a blood vessel injury and aggregating to form a temporary plug. Tissue thromboplastin, or tissue factor, is crucial for triggering the coagulation cascade, leading to the conversion of prothrombin to thrombin. Fibrinogen is a soluble plasma protein that is converted into fibrin by thrombin, forming a mesh that solidifies the clot. Each of these components is integral to effective hemostasis, whereas albumin's functions do not contribute to clot formation.

**2. What distinguishes the spleen from lymph nodes?**

- A. The spleen filters lymph**
- B. The spleen filters blood**
- C. The spleen produces antibodies**
- D. The spleen is larger in size**

The distinguishing feature of the spleen compared to lymph nodes is that the spleen filters blood. Unlike lymph nodes, which are primarily involved in filtering lymph fluid and facilitating an immune response to pathogens found in the lymph, the spleen serves a different function in the body's immune system. It filters the blood to remove old or damaged red blood cells, recycling iron and other components, and acts as a reservoir for blood. Additionally, the spleen plays a critical role in the immune response by producing and storing lymphocytes, which are key to mounting an immune defense, particularly against blood-borne pathogens. While size can vary and the spleen is generally larger than individual lymph nodes, it is the function of filtering blood that sets the spleen apart in terms of its anatomical and physiological roles within the body. The production of antibodies is typically associated with lymphocytes rather than a function solely attributed to the spleen itself.

**3. What type of reaction occurs if an Rh-negative mother carries an Rh-positive child without treatment?**

- A. Blood clotting disorder**
- B. Rh sensitivity reaction**
- C. Immune suppression**
- D. Acute allergic reaction**

When an Rh-negative mother carries an Rh-positive child, a specific immunological response can occur due to the incompatibility of blood types. This situation is known as an Rh sensitivity reaction, which occurs during pregnancy when fetal Rh-positive red blood cells enter the maternal circulation, particularly during childbirth or placental separation. In this scenario, the mother's immune system recognizes the Rh-positive cells as foreign and may produce antibodies against them. This sensitization can lead to the production of anti-Rh antibodies during subsequent pregnancies if another Rh-positive fetus is carried. This reaction is particularly concerning for the health of the second child, as the maternal antibodies can cross the placenta and attack the fetal red blood cells, leading to hemolytic disease of the newborn, which can be severe. The confusion with other choices relates to the distinct nature of an Rh sensitivity reaction compared to conditions like blood clotting disorders or immune suppression, which involve different physiological mechanisms and are not directly related to the incompatibility of blood types in pregnancy. For instance, clotting disorders usually involve issues with the coagulation cascade, while immune suppression would signify a reduced ability of the immune system to respond to infections, rather than an inappropriate immune response to a mismatched blood type. Acute allergic reactions involve an immediate hypersensitivity response.

**4. Which hormone is responsible for stimulating cells to increase in size and divide more frequently?**

- A. Insulin**
- B. Growth hormone**
- C. Cortisol**
- D. Thyroid hormone**

Growth hormone, also known as somatotropin, plays a crucial role in stimulating growth, cell reproduction, and cell regeneration in humans and other animals. It promotes the increase in size of various body tissues through the stimulation of protein synthesis, encouraging cells to not only grow in size but also to proliferate. This hormone exerts its effects primarily on skeletal muscles and bones, which is essential during growth phases, especially during childhood and adolescence. Growth hormone exerts its influence by binding to receptors on target cells, which then leads to various metabolic effects, including an increase in the number of cells (hyperplasia) and the size of existing cells (hypertrophy). This dual action significantly contributes to overall growth and development. Other hormones mentioned, such as insulin, cortisol, and thyroid hormone, have important roles in metabolism and regulation of various bodily functions, but they do not primarily function to stimulate growth in terms of increasing cell size and division in the same manner as growth hormone does. Insulin is involved in glucose metabolism and storage, cortisol plays a key role in stress response and metabolism regulation, and thyroid hormone regulates metabolism but does not directly stimulate cell division and growth like growth hormone does.

**5. 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

**6. What are homologous pairs of chromosomes?**

- A. Chromosomes from the mother and father that contain similar genetic information**
- B. Chromosomes that are identical in shape and size**
- C. Chromosomes that undergo mutations during cell division**
- D. Chromosomes that are only present in males**

Homologous pairs of chromosomes refer to sets of chromosomes, one inherited from each parent, that share similar structure and genetic information. In a homologous pair, each chromosome contains genes for the same traits at corresponding loci, though they may carry different alleles of those genes. This similarity is crucial during processes like meiosis, where homologous chromosomes align and exchange genetic material through recombination, contributing to genetic diversity in offspring. The other choices do not accurately describe homologous chromosomes. Identical chromosomes in shape and size, while often true for homologous pairs, do not capture the essence of their relationship regarding genetic information. Mutations during cell division may affect chromosomes but are not a defining characteristic of homologous pairs. The claim that homologous chromosomes are only present in males is incorrect since both males and females have homologous pairs in their somatic cells. Hence, the first choice correctly describes the genetic relationship and origin of homologous chromosomes.

**7. Which of the following is a function of bile?**

- A. Digestion of proteins**
- B. Emulsification of fats**
- C. Absorption of vitamins**
- D. Secretion of hormones**

Bile plays a crucial role in the digestive process, particularly concerning fats. The primary function of bile is the emulsification of fats, which is essential for the digestion and absorption of dietary lipids. Bile, produced by the liver and stored in the gallbladder, contains bile salts that have both hydrophobic and hydrophilic properties. This allows them to interact with fat molecules and break them down into smaller droplets. Emulsification increases the surface area of fats, making them more accessible for digestive enzymes, specifically lipases, to break them down into fatty acids and glycerol for absorption in the intestines. While bile does influence other processes related to digestion, such as assisting in the absorption of fat-soluble vitamins and helping with the overall digestive function, its primary role is the emulsification of fats, making this the correct answer.

**8. What factor contributes to the accumulation of lymph?**

- A. Increased vascular resistance**
- B. Decreased metabolic rate**
- C. Increased osmotic pressure in tissue fluid**
- D. Reduced lymphocyte production**

The accumulation of lymph in the interstitial spaces primarily results from imbalances in the forces that regulate fluid movement between the blood vessels and surrounding tissues. Increased osmotic pressure in the tissue fluid is a key factor that can lead to this accumulation. Osmotic pressure is created by proteins and other solutes in the fluid. When the osmotic pressure in tissue fluid rises, it can draw more fluid into the tissues from the capillaries, leading to an excess of fluid that the lymphatic system may struggle to transport back to circulation. This excess fluid is what we refer to as lymph, and its accumulation can ultimately result in swelling or edema. Understanding this concept underscores the importance of maintaining the balance of fluid movement in the body. Factors like increased vascular resistance or decreased metabolic rate can influence overall fluid dynamics but do not directly lead to an increase in osmotic pressure in tissue fluid in the way that the correct answer does.

**9. A lymphatic obstruction can lead to which of the following conditions?**

- A. High blood pressure**
- B. Infection**
- C. Edema**
- D. Blood clots**

Lymphatic obstruction primarily impacts the fluid balance in the body, leading to a condition known as edema. The lymphatic system is responsible for draining excess interstitial fluid from tissues and returning it to the bloodstream. When there is an obstruction in the lymphatic vessels, the drainage is impaired, causing the accumulation of fluid in the tissues. This buildup results in swelling, which is characteristic of edema. Fluid accumulation can also compromise immune function, as the lymphatic system plays a crucial role in transporting lymphocytes and other immune cells. However, the direct effect of lymphatic obstruction on fluid dynamics is what specifically leads to edema as the most significant result. Other conditions listed, such as high blood pressure, infections, and blood clots, while they may be associated with various pathological states, do not directly result from lymphatic obstruction in the same manner that edema does. In summary, the impediment of lymphatic flow primarily causes fluid retention in tissues, manifesting as edema.

**10. Which type of blood has no agglutinin?**

- A. Type O**
- B. Type A**
- C. Type B**
- D. Type AB**

Type O blood is characterized by the absence of the A and B antigens, also known as agglutinogens, on the surface of its red blood cells. This lack of agglutinogens is significant because it means that type O blood can be considered a universal donor; it can be safely transfused to individuals of any other blood type without the risk of an immune reaction based on these particular antigens. In contrast, Type A blood has A antigens, Type B blood has B antigens, and Type AB blood has both A and B antigens. Each of these blood types can provoke an immune response in a person with a different blood type due to the presence of these specific agglutinogens, which is not a concern with type O blood. Understanding this crucial difference helps clarify why type O is unique among the blood types, particularly in transfusion scenarios.



## 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://rutgersanatomyphysio2.examzify.com>**

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