

# Western Governors University (WGU) NURS2508 D236 Pathophysiology Practice Exam (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. Which of the following hormones work together to regulate blood calcium levels?**
  - A. Insulin and glucagon**
  - B. Calcitonin, parathyroid hormone, and calcitriol**
  - C. Thyroid hormone and cortisol**
  - D. Adrenaline and norepinephrine**
- 2. What condition involves an excessive outward curvature of the spine?**
  - A. Scoliosis**
  - B. Kyphosis**
  - C. Lordosis**
  - D. Spinal stenosis**
- 3. What is a key characteristic of Diabetic Ketoacidosis (DKA)?**
  - A. Normal anion gap**
  - B. Increased blood pressure and glucose**
  - C. Increased anion gap, decreased HCO<sub>3</sub>**
  - D. Low blood glucose levels**
- 4. What happens when acidosis goes untreated?**
  - A. Increased calcium levels**
  - B. Decreased sodium retention**
  - C. Increase in potassium levels**
  - D. Reduction in urine output**
- 5. What is commonly referred to as an upper respiratory tract infection?**
  - A. Pneumonia**
  - B. Bronchitis**
  - C. Common cold**
  - D. Asthma**

- 6. What distinguishes ischemic CVA from hemorrhagic CVA?**
- A. A clot causing ischemic CVA and blood causing hemorrhagic CVA**
  - B. A blood clot causing hemorrhagic CVA and a clot causing ischemic CVA**
  - C. A clot causing both types of CVA**
  - D. None of the above**
- 7. What symptoms can be remembered with the acronym "UP, UP, UP, DOWN, UP" in relation to which disease?**
- A. Cushing's disease**
  - B. Acromegaly**
  - C. Gonorrhea**
  - D. Triple negative breast cancer**
- 8. Which condition involves inflammation inside the heart?**
- A. Pericarditis**
  - B. Myocarditis**
  - C. Endocarditis**
  - D. Aortic regurgitation**
- 9. Which cells are primarily involved in the process of bone remodeling, and what are their respective functions?**
- A. Osteoblasts build new bone; osteocytes destroy old bone**
  - B. Osteoclasts destroy old bone; osteoblasts build new bone**
  - C. Macrophages facilitate turnover; osteocytes build new bone**
  - D. Chondrocytes facilitate calcium retention; osteoblasts destroy old bone**
- 10. Cor pulmonale refers to which condition?**
- A. Left-sided heart failure caused by hypertension**
  - B. Right-sided heart failure from chronic lung disease**
  - C. Acute heart failure due to heart attack**
  - D. Heart rhythm disorders resulting from aging**

## **Answers**

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

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## **Explanations**

**1. Which of the following hormones work together to regulate blood calcium levels?**

**A. Insulin and glucagon**

**B. Calcitonin, parathyroid hormone, and calcitriol**

**C. Thyroid hormone and cortisol**

**D. Adrenaline and norepinephrine**

The correct answer is the combination of calcitonin, parathyroid hormone, and calcitriol, as these hormones play a crucial role in maintaining and regulating blood calcium levels in the body. Calcitonin, produced by the thyroid gland, helps decrease blood calcium levels by inhibiting osteoclast activity and promoting the excretion of calcium by the kidneys. Parathyroid hormone (PTH), released by the parathyroid glands, has the opposite effect; it increases blood calcium levels by stimulating osteoclasts to break down bone and release calcium into the bloodstream, enhancing renal reabsorption of calcium, and stimulating the conversion of vitamin D into calcitriol. Calcitriol, or active vitamin D, further supports the increase of blood calcium levels by promoting the absorption of calcium from the intestines and also works in concert with PTH to mobilize calcium from the bones. Together, these hormones create a balanced system that ensures calcium homeostasis in the body, responding to various physiological needs and maintaining overall health. In contrast, the other hormone combinations listed do not primarily influence blood calcium levels. Insulin and glucagon are involved in glucose metabolism; thyroid hormone is primarily concerned with metabolic rate and growth, while cortisol plays roles in

**2. What condition involves an excessive outward curvature of the spine?**

**A. Scoliosis**

**B. Kyphosis**

**C. Lordosis**

**D. Spinal stenosis**

Kyphosis is characterized by an excessive outward curvature of the spine, leading to a hunched or rounded back. This condition can occur at any age but is often seen in older adults due to degenerative diseases of the spine, such as arthritis or osteoporosis, which can weaken the vertebrae and encourage an exaggerated forward bending. The condition may result in discomfort, difficulty in maintaining balance, and even respiratory issues in severe cases due to reduced thoracic cavity space. Treatment options often include physical therapy, bracing, and in severe instances, surgical intervention to correct the curvature and relieve associated symptoms. Understanding kyphosis is essential in differentiating it from other spinal conditions, as it specifically pertains to the curvature that directs outward rather than inward or lateral.

### 3. What is a key characteristic of Diabetic Ketoacidosis (DKA)?

- A. Normal anion gap
- B. Increased blood pressure and glucose
- C. Increased anion gap, decreased HCO<sub>3</sub>**
- D. Low blood glucose levels

A key characteristic of Diabetic Ketoacidosis (DKA) is the increased anion gap accompanied by decreased bicarbonate (HCO<sub>3</sub>) levels. In DKA, the body undergoes a metabolic process due to a deficiency of insulin, leading to the production of ketone bodies. These ketone bodies are acidic and contribute to metabolic acidosis, which is reflected in the laboratory findings. The increase in the anion gap indicates the presence of unmeasured anions, specifically the accumulation of these ketoacids. The decreased bicarbonate level is a direct consequence of the body's attempt to buffer the acidosis that arises from the accumulation of hydrogen ions due to the excess ketones. Together, these laboratory results signify the underlying enzymatic and metabolic derangements that occur in a state of DKA, making it essential for diagnosis and management. In contrast, a normal anion gap would suggest a different type of metabolic disturbance that does not align with the pathophysiology of DKA. Increased blood pressure and glucose are not definitive or exclusive characteristics of DKA; while hyperglycemia is present, blood pressure may vary widely and is not a reliable marker for this condition. Low blood glucose levels are characteristic of another type of metabolic disturbance, rather

### 4. What happens when acidosis goes untreated?

- A. Increased calcium levels
- B. Decreased sodium retention
- C. Increase in potassium levels**
- D. Reduction in urine output

When acidosis goes untreated, there is an increase in potassium levels in the blood, a condition known as hyperkalemia. This occurs primarily due to the body's attempt to compensate for the acidosis through several mechanisms. In an acidic environment, hydrogen ions (H<sup>+</sup>) can be exchanged for potassium ions (K<sup>+</sup>) in the cells, leading to potassium shifting from the intracellular space to the extracellular space, which raises potassium levels in the blood. Additionally, acidosis can impair renal function, reducing the kidneys' ability to excrete potassium effectively. This can further contribute to elevated serum potassium levels. Since potassium plays a critical role in heart function and muscle contraction, hyperkalemia can lead to serious complications, such as arrhythmias or even cardiac arrest. Understanding the pathophysiological response to acidosis is crucial because it highlights the importance of correcting acid-base imbalances promptly to prevent potentially life-threatening disturbances in potassium levels.

**5. What is commonly referred to as an upper respiratory tract infection?**

- A. Pneumonia**
- B. Bronchitis**
- C. Common cold**
- D. Asthma**

An upper respiratory tract infection is primarily characterized by infections affecting the nasal passages, sinuses, pharynx, and larynx. The common cold is the most prevalent form of upper respiratory infection and is typically caused by viral pathogens. Symptoms often include a runny or stuffy nose, sore throat, sneezing, and coughing. These manifestations clearly define the nature of upper respiratory tract infections, distinguishing them from other conditions. Pneumonia and bronchitis, while they can involve the respiratory system, typically affect the lower respiratory tract. Pneumonia involves the air sacs in the lungs and can lead to serious complications, whereas bronchitis involves the inflammation of the bronchial tubes. Asthma, although it can cause respiratory symptoms, is a chronic condition characterized by airway hyperreactivity and obstruction, rather than an infectious process. Thus, the common cold stands out as a quintessential example of an upper respiratory tract infection due to its specific site of infection and the commonality of its causative agents among the population.

**6. What distinguishes ischemic CVA from hemorrhagic CVA?**

- A. A clot causing ischemic CVA and blood causing hemorrhagic CVA**
- B. A blood clot causing hemorrhagic CVA and a clot causing ischemic CVA**
- C. A clot causing both types of CVA**
- D. None of the above**

The key distinction between ischemic cerebrovascular accident (CVA) and hemorrhagic CVA lies in their underlying pathophysiological causes. Ischemic CVA occurs when a blood vessel supplying blood to the brain becomes blocked, typically by a thrombus (a blood clot) or an embolus (a clot that travels from another part of the body). This blockage reduces blood flow to specific areas of the brain, leading to tissue damage due to the lack of oxygen and nutrients. On the other hand, hemorrhagic CVA is caused by the rupture of a blood vessel in the brain, which results in bleeding (or hemorrhage) into or around the brain tissue. This can cause increased intracranial pressure and damage to brain cells due to the pressure from the accumulated blood. Therefore, the correct answer emphasizes that a clot is responsible for ischemic CVA while blood causes hemorrhagic CVA, accurately reflecting the fundamental differences in their etiology. Understanding this distinction is crucial for diagnosing and managing the types of strokes, as they require very different treatment approaches.

**7. What symptoms can be remembered with the acronym "UP, UP, UP, DOWN, UP" in relation to which disease?**

**A. Cushing's disease**

**B. Acromegaly**

**C. Gonorrhea**

**D. Triple negative breast cancer**

The acronym "UP, UP, UP, DOWN, UP" is a mnemonic used to help remember the symptoms associated with Cushing's disease. Each "UP" typically refers to symptoms that are increased or elevated, while "DOWN" refers to symptoms that are decreased. In the context of Cushing's disease, the following can be attributed to this mnemonic: - UP: Increased cortisol levels, increased blood pressure, and increased blood sugar levels. - DOWN: Decreased bone density or potentially a decrease in muscle mass, leading to weakness. - UP: Increased fat deposition, especially in the abdomen and face (often referred to as a "moon face"). These symptoms are consistent with the excessive production of cortisol that characterizes Cushing's disease, which can arise from various causes, including pituitary adenomas or adrenal tumors. This disease affects multiple body systems and can lead to a variety of physical and metabolic changes. Understanding this acronym helps students relate the clinical manifestations of Cushing's disease to the underlying pathophysiological processes, reinforcing the connections between symptoms and their physiological basis.

**8. Which condition involves inflammation inside the heart?**

**A. Pericarditis**

**B. Myocarditis**

**C. Endocarditis**

**D. Aortic regurgitation**

The condition that specifically involves inflammation inside the heart is endocarditis. This condition affects the inner lining of the heart chambers and valves, known as the endocardium. It typically occurs when bacteria or other pathogens enter the bloodstream and attach to damaged areas of the heart, leading to inflammation and potential complications such as valve dysfunction or the formation of vegetations. Understanding endocarditis is crucial because it can manifest with diverse symptoms, including fever, chills, fatigue, and new or changing heart murmurs, and it often requires prompt medical intervention to avoid severe complications. While pericarditis refers to inflammation of the pericardium (the outer lining of the heart) and myocarditis involves inflammation of the heart muscle itself (the myocardium), endocarditis specifically targets the innermost layer of the heart. Aortic regurgitation is a condition involving the aortic valve but does not inherently involve inflammation.

9. Which cells are primarily involved in the process of bone remodeling, and what are their respective functions?
- A. Osteoblasts build new bone; osteocytes destroy old bone
  - B. Osteoclasts destroy old bone; osteoblasts build new bone**
  - C. Macrophages facilitate turnover; osteocytes build new bone
  - D. Chondrocytes facilitate calcium retention; osteoblasts destroy old bone

The process of bone remodeling is primarily managed by two types of cells: osteoclasts and osteoblasts. Osteoclasts are responsible for the resorption of bone, which involves breaking down old or damaged bone tissue. This activity is essential for maintaining bone health and allowing for the replacement of skeletal materials. Osteoblasts, on the other hand, play a crucial role in the formation of new bone. They synthesize and secrete the components necessary for building up the bone matrix and mineralizing it to create strong, healthy bones. The coordination between these two cell types is vital for maintaining homeostasis in the skeletal system. Osteoclasts resorb bone to make way for new bone growth, while osteoblasts ensure that adequate new bone is produced to replace what has been resorbed. This balanced activity enables the skeleton to adapt to various stresses and strains throughout life, as well as repair any damage that occurs. In contrast, the other options incorrectly attribute functions to different cell types or present relationships that do not align with the established understanding of bone physiology. For instance, macrophages are involved in immune responses and tissue repair but do not primarily regulate bone remodeling. Chondrocytes are related to cartilage formation rather than bone formation or

10. Cor pulmonale refers to which condition?
- A. Left-sided heart failure caused by hypertension
  - B. Right-sided heart failure from chronic lung disease**
  - C. Acute heart failure due to heart attack
  - D. Heart rhythm disorders resulting from aging

Cor pulmonale specifically refers to the alteration in the structure and function of the right ventricle of the heart that occurs due to a primary disorder of the respiratory system, typically chronic lung disease. When the lungs are compromised, as seen in conditions such as chronic obstructive pulmonary disease (COPD) or pulmonary hypertension, the blood vessels in the lungs become narrowed. This results in increased pressure within the pulmonary arteries, leading to right ventricular hypertrophy and ultimately right-sided heart failure. Therefore, recognizing cor pulmonale as a consequence of chronic lung disease is critical for understanding the relationship between respiratory and cardiovascular conditions. This condition highlights the impact of respiratory dysfunction on heart health, emphasizing the importance of comprehensive treatment approaches for patients with chronic lung diseases.

## 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://wgu-nurs2508-d236.examzify.com>**

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