

NCCAOM Biomedicine Board 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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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	6
Answers	9
Explanations	11
Next Steps	17

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. Tics are characterized by:**
 - A. Slow and rhythmic movements**
 - B. Sudden and nonrhythmic movements**
 - C. Consistent and controlled movements**
 - D. Only vocalizations**
- 2. What is the leading cause of unintentional injury death in the 1-44 age group?**
 - A. Car accidents**
 - B. Drug overdoses**
 - C. Falls**
 - D. Health complications**
- 3. Which cranial nerves are primarily involved in eye movement?**
 - A. 2, 3, 4**
 - B. 3, 4, 6**
 - C. 1, 2, 3**
 - D. 5, 6, 7**
- 4. What type of functions does the glossopharyngeal nerve serve?**
 - A. Purely sensory**
 - B. Purely motor**
 - C. Both sensory and motor**
 - D. Exclusively autonomic**
- 5. What percentage of blood is composed of plasma?**
 - A. 45%**
 - B. 55%**
 - C. 60%**
 - D. 75%**

- 6. Which phase describes the autonomic system responsible for "rest and digest" functions?**
- A. Sympathetic**
 - B. Parasympathetic**
 - C. CNS**
 - D. Sensory Nervous System**
- 7. What is the potential side effect of statins related to muscle health?**
- A. Fatigue**
 - B. Myalgia**
 - C. Rash**
 - D. Nausea**
- 8. What is the most common cause of seizure in the elderly population?**
- A. Tumor**
 - B. Stroke**
 - C. Head trauma**
 - D. Infection**
- 9. What is an irreversible condition characterized by severe memory deficits?**
- A. Wernicke's encephalopathy**
 - B. Korsakoff psychosis**
 - C. Rheumatoid arthritis**
 - D. Systemic lupus erythematosus**
- 10. Which condition would most likely require monitoring of vitamin B12 levels?**
- A. Diabetes**
 - B. Celiac disease**
 - C. Chronic gastritis**
 - D. Hypertension**

Answers

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

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Explanations

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1. Tics are characterized by:

- A. Slow and rhythmic movements**
- B. Sudden and nonrhythmic movements**
- C. Consistent and controlled movements**
- D. Only vocalizations**

Tics are indeed characterized by sudden and nonrhythmic movements or sounds. They can manifest as motor tics, which involve movements such as blinking, head jerking, or facial grimacing, or vocal tics, which can include sounds like throat clearing or grunting. The hallmark of tics is their abrupt onset, and they are often seen as involuntary and can vary in frequency and intensity. Unlike slow or rhythmic movements, tics are typically quick and can be suppressed temporarily, but this often leads to an increase in occurrence once the suppression is lifted. This distinguishes them from more coordinated movements, as well as from simple vocalizations, which do not encompass the full range of tic disorders that include both motor and vocal components.

2. What is the leading cause of unintentional injury death in the 1-44 age group?

- A. Car accidents**
- B. Drug overdoses**
- C. Falls**
- D. Health complications**

The leading cause of unintentional injury death in the 1-44 age group is primarily attributed to car accidents. This demographic is particularly vulnerable to traffic-related incidents due to factors such as higher rates of driving prevalence and risk-taking behavior. Car accidents encompass a significant portion of overall injury-related fatalities within this age range, making it a critical public health concern. Understanding the causes of unintentional injuries in this age group highlights the importance of promoting safety measures, adhering to traffic laws, and raising awareness about responsible driving habits. This context is essential for appreciating the impact of vehicular accidents on mortality statistics, especially in young and middle-aged populations. While drug overdoses and falls contribute to unintentional injury deaths, particularly in certain subsections of the population, car accidents remain the predominant factor when looking at the broader 1-44 age group. Health complications do lead to unintentional injuries, but they typically do not classify in the same manner as accidents, which are often preventable through safety interventions.

3. Which cranial nerves are primarily involved in eye movement?

- A. 2, 3, 4
- B. 3, 4, 6**
- C. 1, 2, 3
- D. 5, 6, 7

The cranial nerves primarily involved in eye movement are the oculomotor nerve (III), the trochlear nerve (IV), and the abducens nerve (VI). The oculomotor nerve (III) innervates several muscles responsible for most of the eye's movements, as well as controlling the constriction of the pupil and maintaining an open eyelid. The trochlear nerve (IV) controls the superior oblique muscle, which allows for the movement of the eye downward and laterally. The abducens nerve (VI) is responsible for innervating the lateral rectus muscle, which facilitates the outward movement of the eye. All three of these nerves work together to coordinate eye movements for visual tracking and maintaining proper alignment of the eyes. This makes the selected answer accurate, as it identifies the correct cranial nerves that are involved in these functions. Other options include cranial nerves that either do not contribute to eye movement or are not primarily involved in this specific function.

4. What type of functions does the glossopharyngeal nerve serve?

- A. Purely sensory
- B. Purely motor
- C. Both sensory and motor**
- D. Exclusively autonomic

The glossopharyngeal nerve is classified as a mixed nerve, meaning it has both sensory and motor functions. Its sensory functions include providing taste sensation from the posterior third of the tongue and contributing to the sensation from the oropharynx and tonsillar region. Additionally, it plays a role in the reflex control of blood pressure and chemoreception from the carotid body and sinus. On the motor side, the glossopharyngeal nerve innervates the stylopharyngeus muscle, which is involved in swallowing. This dual role aligns with the classification of the nerve as serving both sensory and motor functions, making the correct answer comprehensive in describing the diverse capabilities of the glossopharyngeal nerve. Understanding that cranial nerves can have mixed functions is essential, as it highlights the complexity of the nervous system in processing various types of signals, thus providing a more holistic view of their roles in human physiology.

5. What percentage of blood is composed of plasma?

- A. 45%
- B. 55%**
- C. 60%
- D. 75%

The composition of blood includes both cellular components and plasma, which is the liquid portion of blood. Plasma is known to make up approximately 55% of the total blood volume in a healthy adult. It is essential for transporting nutrients, hormones, waste products, and proteins throughout the body. This 55% figure encompasses various components, such as water, electrolytes, proteins, and hormones, all of which play critical roles in maintaining homeostasis and facilitating bodily functions. The remaining percentage of blood volume consists mainly of red blood cells, white blood cells, and platelets, which together are classified as formed elements. Understanding the composition of blood and the role of plasma is critical for various areas in biomedical science, including hematology and physiology. Recognizing that plasma constitutes around 55% of blood serves as a foundational knowledge point for students and professionals in the healthcare field.

6. Which phase describes the autonomic system responsible for "rest and digest" functions?

- A. Sympathetic
- B. Parasympathetic**
- C. CNS
- D. Sensory Nervous System

The parasympathetic nervous system is the part of the autonomic nervous system that is primarily responsible for "rest and digest" functions. This system helps to conserve energy and is active during periods of rest and relaxation. It promotes bodily functions that occur when the body is in a state of calm, such as stimulating digestion, slowing the heart rate, and facilitating the body's recovery and maintenance processes. During parasympathetic activation, the body undergoes various physiological changes. For example, it increases secretions of digestive enzymes, stimulates peristalsis (the movement of the digestive tract), and promotes increased blood flow to the intestines, all of which work together to optimize the body's ability to digest food and absorb nutrients. This phase contrasts with the sympathetic nervous system, which handles "fight or flight" responses, increasing heart rate and redirecting blood flow away from the digestive tract to muscles and vital organs for immediate action. The central nervous system (CNS) refers more broadly to the brain and spinal cord, while the sensory nervous system pertains to the aspects of the nervous system that handle sensory information and perception, not the regulation of bodily functions associated with rest and digestion. Therefore, the designation of the parasympathetic system as

7. What is the potential side effect of statins related to muscle health?

- A. Fatigue**
- B. Myalgia**
- C. Rash**
- D. Nausea**

Myalgia is a term that refers specifically to muscle pain or discomfort, which can be a side effect associated with the use of statins. Statins are medications commonly prescribed to lower cholesterol levels and reduce the risk of cardiovascular diseases. One of the well-documented side effects of statins is muscle-related symptoms, including myalgia, which may present as mild to moderate muscle aches without significant increase in muscle enzymes. Myalgia can occur due to statins' effects on muscle metabolism, including the potential inhibition of ATP (adenosine triphosphate) production, which is crucial for muscle cell energy. Some patients may experience discomfort that leads to reduced physical activity or even cessation of the medication. Other related side effects include more serious conditions such as rhabdomyolysis, characterized by severe muscle breakdown, but myalgia itself is the most common muscle-related symptom observed with statin use. Understanding this connection is critical for healthcare providers to monitor and manage patients taking statins effectively.

8. What is the most common cause of seizure in the elderly population?

- A. Tumor**
- B. Stroke**
- C. Head trauma**
- D. Infection**

In the elderly population, strokes are recognized as the most common cause of seizures. This demographic experiences a higher incidence of strokes due to increased risk factors such as hypertension, atherosclerosis, and other vascular problems. When a stroke occurs, it can lead to brain lesions or disturbances in electrical activity, resulting in seizures. While brain tumors, head trauma, and infections can also lead to seizures in older adults, they are less frequent causes compared to strokes. Brain tumors may occur, but they do not have the same prevalence as strokes as a seizure trigger in this age group. Head trauma is more common in younger individuals and may not be as significant in the elderly unless associated with falls. Infections, though they can provoke seizures, are typically acute and might not be the primary long-term issue like stroke-related changes in brain function. Understanding the significance of stroke gives clarity to why it's important in the consideration of seizure activity in elderly patients, making it a priority area for assessment and management in this population.

9. What is an irreversible condition characterized by severe memory deficits?

- A. Wernicke's encephalopathy**
- B. Korsakoff psychosis**
- C. Rheumatoid arthritis**
- D. Systemic lupus erythematosus**

Korsakoff psychosis is an irreversible condition often associated with chronic alcohol abuse and thiamine (vitamin B1) deficiency. It is characterized by significant memory disturbances, including anterograde amnesia (difficulty forming new memories) and retrograde amnesia (loss of previously formed memories). Individuals with Korsakoff psychosis may exhibit confabulation, where they create false memories or stories to fill in gaps in their memory. The neurobiological basis of this condition involves damage to specific brain areas, including the mammillary bodies and the thalamus, due to prolonged thiamine deficiency. This leads to the distinctive memory deficits that are hallmarked in anorexia. In contrast, Wernicke's encephalopathy, which results from acute thiamine deficiency, tends to cause confusion, ophthalmoplegia, and ataxia but is somewhat reversible if treated early with thiamine supplementation. Conditions like rheumatoid arthritis and systemic lupus erythematosus are autoimmune diseases primarily affecting the joints and connective tissues, respectively, and do not typically lead to memory deficits as seen in Korsakoff psychosis. Thus, among the provided choices, the characteristic severe memory deficits and the irreversible nature of the condition are most accurately represented by

10. Which condition would most likely require monitoring of vitamin B12 levels?

- A. Diabetes**
- B. Celiac disease**
- C. Chronic gastritis**
- D. Hypertension**

Chronic gastritis is a condition characterized by inflammation of the stomach lining, which can interfere with the production of intrinsic factor, a protein necessary for the absorption of vitamin B12 in the intestines. When there is chronic inflammation or damage to the gastric mucosa, it can lead to a deficiency in the absorption of vitamin B12, resulting in low serum levels of this vital nutrient. These deficiencies can have significant implications, as vitamin B12 is crucial for DNA synthesis, red blood cell production, and neurological function. Monitoring vitamin B12 levels in patients with chronic gastritis is important to detect potential deficiencies early and address them promptly, preventing complications such as anemia and neurological issues. Other conditions listed generally do not have the same direct impact on the absorption of vitamin B12 and therefore do not require the same level of monitoring concerning this vitamin.

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://nccaombiomedboard.examzify.com>

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