

NCCAOM Biomedicine Board 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. What is the primary cause of urge incontinence?**
 - A. Poor closure of the bladder**
 - B. A hyperactive bladder**
 - C. Weak abdominal muscles**
 - D. Blockage of the urethra**

- 2. What is the primary cause of Addison's disease?**
 - A. Overproduction of hormones**
 - B. Deficiency of adrenal hormones**
 - C. Excessive cortisol production**
 - D. Autoimmune destruction of the pancreas**

- 3. What cranial nerve is involved in the parasympathetic function for the parotid glands?**
 - A. Cranial nerve V**
 - B. Cranial nerve VII**
 - C. Cranial nerve IX**
 - D. Cranial nerve X**

- 4. What symptom typically accompanies generalized seizures?**
 - A. Localized shaking**
 - B. Unconsciousness**
 - C. Visual hallucinations**
 - D. Emotional swings**

- 5. What is the most common cause of congenital malformations in infants?**
 - A. Environmental factors**
 - B. Genetic disorders**
 - C. Maternal drug use**
 - D. Infections during pregnancy**

- 6. What is commonly used to monitor recurrence or progression of prostate cancer?**
- A. Blood glucose levels**
 - B. Prostate-specific antigen (PSA)**
 - C. Liver function tests**
 - D. Complete blood count (CBC)**
- 7. When do symptoms of gastroesophageal reflux disease (GERD) typically occur?**
- A. Immediately upon eating**
 - B. 30-90 minutes after a meal**
 - C. 2 hours after a meal**
 - D. Only during sleep**
- 8. What dietary modification is the primary treatment for celiac disease?**
- A. Dairy-free diet**
 - B. Low-carb diet**
 - C. Gluten-free diet**
 - D. High-protein diet**
- 9. Which of the following describes chronic bronchitis?**
- A. Characterized by airflow obstruction**
 - B. Characterized by decreased lung volumes**
 - C. Characterized by reversible symptoms**
 - D. Characterized by normal airway function**
- 10. Which condition is characterized by a 47 XXY chromosomal pattern?**
- A. Turner syndrome**
 - B. Klinefelter syndrome**
 - C. Down syndrome**
 - D. Patau syndrome**

Answers

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

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Explanations

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1. What is the primary cause of urge incontinence?

- A. Poor closure of the bladder
- B. A hyperactive bladder**
- C. Weak abdominal muscles
- D. Blockage of the urethra

The primary cause of urge incontinence is a hyperactive bladder, which is characterized by involuntary contractions of the bladder muscle (detrusor) that occur unpredictably and cause a sudden, intense urge to urinate. This condition leads to an inability to suppress these contractions, resulting in an urgent need to urinate and often leading to involuntary leakage of urine before reaching the bathroom. A hyperactive bladder can be due to various factors, including age-related changes, neurological conditions, or irritants such as caffeine and alcohol, all of which can heighten the sensitivity of the bladder. Understanding this mechanism is crucial for effective management and treatment options for patients experiencing urge incontinence. The other choices provided do not align with the primary causative factors associated with urge incontinence. Poor closure of the bladder relates more to stress incontinence, weak abdominal muscles can affect overall pelvic support but are not the direct cause of urge incontinence, and blockage of the urethra typically leads to a different type of urinary issue such as obstructive chronic urinary retention rather than urge incontinence.

2. What is the primary cause of Addison's disease?

- A. Overproduction of hormones
- B. Deficiency of adrenal hormones**
- C. Excessive cortisol production
- D. Autoimmune destruction of the pancreas

Addison's disease is primarily characterized by a deficiency of adrenal hormones, specifically cortisol and aldosterone. This occurs when the adrenal glands, located on top of the kidneys, do not produce sufficient amounts of these vital hormones. The most common cause of Addison's disease is autoimmune destruction of the adrenal cortex, where the body's own immune system mistakenly attacks and destroys the adrenal glands, leading to a significant reduction in hormone production. Cortisol is crucial for various bodily functions, including the response to stress, metabolism regulation, and blood sugar levels. Aldosterone helps control blood pressure by regulating sodium and potassium levels. When there is a deficiency in these hormones, individuals may experience symptoms like fatigue, weight loss, low blood pressure, and hyperpigmentation. While other options mention hormone production issues, they do not accurately describe the underlying issue in Addison's disease, which is predominantly the deficiency of these essential hormones.

3. What cranial nerve is involved in the parasympathetic function for the parotid glands?

- A. Cranial nerve V**
- B. Cranial nerve VII**
- C. Cranial nerve IX**
- D. Cranial nerve X**

The cranial nerve that plays a key role in the parasympathetic innervation of the parotid glands is cranial nerve IX, also known as the glossopharyngeal nerve. This nerve is responsible for several functions, including taste sensation from the posterior one-third of the tongue, sensory functions in the throat, and importantly, it provides parasympathetic fibers to the parotid glands, which stimulate saliva production. Specifically, these parasympathetic fibers travel from the glossopharyngeal nerve, synapse at the otic ganglion, and then reach the parotid glands via the auriculotemporal nerve, which is a branch of the mandibular division of cranial nerve V. This pathway is essential for the regulation of salivary secretion in response to food intake. Understanding the role of cranial nerve IX helps highlight the parasympathetic functions it serves distinctively in comparison to other cranial nerves, such as cranial nerve VII, which innervates the submandibular and sublingual glands, or cranial nerve X, which primarily innervates structures in the thorax and abdomen rather than contributing directly to salivation in the parotid glands.

4. What symptom typically accompanies generalized seizures?

- A. Localized shaking**
- B. Unconsciousness**
- C. Visual hallucinations**
- D. Emotional swings**

Generalized seizures are characterized by widespread electrical activity across both hemispheres of the brain, which often results in a loss of consciousness. This symptom is a hallmark of generalized seizures, distinguishing them from focal seizures, which may involve localized areas of the brain and can present with various symptoms such as localized shaking without loss of consciousness. The absence of consciousness during a generalized seizure can lead to variations in the individual's responsiveness and can be associated with postictal confusion following the seizure episode. Recognizing this symptom is crucial for proper diagnosis and management of seizure disorders. Other symptoms such as localized shaking, visual hallucinations, or emotional swings might occur in different contexts or types of seizures, but they do not typically characterize generalized seizures. Thus, a loss of consciousness is central to understanding the presentation of generalized seizures.

5. What is the most common cause of congenital malformations in infants?

- A. Environmental factors**
- B. Genetic disorders**
- C. Maternal drug use**
- D. Infections during pregnancy**

The most common cause of congenital malformations in infants is attributed to environmental factors. This includes a range of influences such as maternal nutrition, exposure to teratogens, and various environmental pollutants. Teratogens, which are agents that cause malformation during embryonic development, can include substances like alcohol, medications, and chemicals. These factors can significantly impact fetal development, especially during the early stages of pregnancy when the organs and structures are forming. While genetic disorders certainly play a significant role in congenital malformations, leading to conditions like Down syndrome or cystic fibrosis, studies indicate that environmental factors are more prevalent in the overall population of congenital anomalies when considering both non-genetic and genetic influences. Maternal drug use can be a subset of environmental factors, but it doesn't encompass the full range of influences. Similarly, infections during pregnancy, such as those caused by rubella or cytomegalovirus, also contribute to congenital malformations but are less common when compared to the broader category of environmental factors. Overall, acknowledging the impact of environmental influences is essential for understanding the primary drivers behind congenital malformations in the infant population.

6. What is commonly used to monitor recurrence or progression of prostate cancer?

- A. Blood glucose levels**
- B. Prostate-specific antigen (PSA)**
- C. Liver function tests**
- D. Complete blood count (CBC)**

Prostate-specific antigen (PSA) is a protein produced by both normal and malignant cells of the prostate gland. It is most commonly used as a biomarker to monitor individuals diagnosed with prostate cancer. After initial treatment, such as surgery or radiation, PSA levels are regularly measured because rising levels may indicate recurrence or progression of the disease. Thus, it serves as an important tool in clinical practice for tracking the status of prostate cancer over time. In contrast, blood glucose levels, liver function tests, and complete blood count (CBC) do not serve as reliable indicators of prostate cancer specifically. Blood glucose levels are primarily used to assess diabetes and metabolic conditions, liver function tests evaluate the health of the liver and detect liver diseases, and a CBC is used to assess overall health and identify various conditions such as infections or anemia. None of these provide specific information about prostate cancer recurrence or progression like PSA does.

7. When do symptoms of gastroesophageal reflux disease (GERD) typically occur?

- A. Immediately upon eating**
- B. 30-90 minutes after a meal**
- C. 2 hours after a meal**
- D. Only during sleep**

Symptoms of gastroesophageal reflux disease (GERD) typically occur 30-90 minutes after a meal. This timing is associated with the digestion process and the function of the lower esophageal sphincter. After eating, the stomach produces acid to help digest food, and when the stomach is full, increased pressure can lead to the relaxation of the sphincter, allowing acid to flow back into the esophagus. As food moves through the digestive system, there is a greater likelihood of experiencing symptoms such as heartburn during this period. The manifestation of symptoms also accounts for the timing since lying down shortly after eating or consuming large meals can exacerbate GERD symptoms. Being aware of this symptom timing can help patients manage and alleviate their GERD by adjusting meal sizes or meal timing in relation to lying down or sleeping.

8. What dietary modification is the primary treatment for celiac disease?

- A. Dairy-free diet**
- B. Low-carb diet**
- C. Gluten-free diet**
- D. High-protein diet**

The primary treatment for celiac disease is a gluten-free diet. Celiac disease is an autoimmune disorder where ingestion of gluten, a protein found in wheat, barley, and rye, leads to damage in the small intestine. The consumption of gluten triggers an inappropriate immune response that results in inflammation and injury to the intestinal lining, which can cause a range of gastrointestinal and systemic symptoms. By eliminating gluten from the diet, individuals with celiac disease can prevent the adverse effects associated with gluten consumption, allowing the intestinal lining to heal and reducing symptoms such as diarrhea, abdominal pain, and malabsorption of nutrients. This dietary modification is essential for managing the disease and preventing long-term complications, such as malnutrition and an increased risk of other autoimmune disorders and certain cancers. While some other dietary restrictions may provide benefits for various health conditions, they do not address the fundamental issue in celiac disease, which is the intolerance to gluten. Therefore, following a strict gluten-free diet is the only effective means of managing celiac disease and promoting recovery.

9. Which of the following describes chronic bronchitis?

- A. Characterized by airflow obstruction**
- B. Characterized by decreased lung volumes**
- C. Characterized by reversible symptoms**
- D. Characterized by normal airway function**

Chronic bronchitis is primarily characterized by airflow obstruction, which results from chronic inflammation of the bronchial tubes. This inflammation leads to increased mucus production and narrowing of the airways, making it difficult for air to flow in and out of the lungs effectively. Over time, the persistent cough and sputum production that define chronic bronchitis contribute to this obstruction. In contrast, decreased lung volumes, while potentially relevant to many respiratory diseases, are not the hallmark of chronic bronchitis; rather, they may better characterize restrictive lung diseases. Reversible symptoms are more indicative of asthma, where airway obstruction can improve with bronchodilators. Normal airway function does not apply to chronic bronchitis, as the condition inherently involves impaired airflow due to the pathological changes in the airways. Therefore, the defining characteristic of airflow obstruction is a fundamental aspect of chronic bronchitis.

10. Which condition is characterized by a 47 XXY chromosomal pattern?

- A. Turner syndrome**
- B. Klinefelter syndrome**
- C. Down syndrome**
- D. Patau syndrome**

The condition that is characterized by a 47 XXY chromosomal pattern is Klinefelter syndrome. This genetic condition occurs when a male has an extra X chromosome, resulting in the XXY configuration. The presence of this additional X chromosome can lead to a variety of physical and developmental differences, such as reduced testosterone levels, development of breast tissue, and potential learning difficulties. Klinefelter syndrome typically manifests in males, as the presence of two X chromosomes, along with one Y chromosome, affects their sexual development and secondary sexual characteristics. This chromosomal pattern is distinct from the conditions listed in the other options, which involve different chromosomal abnormalities. For example, Turner syndrome involves a 45 X chromosomal structure, where females are typically missing one X chromosome. Down syndrome is associated with an extra chromosome 21, leading to a trisomy, while Patau syndrome is linked to an extra chromosome 13. Thus, Klinefelter syndrome is specifically defined by the 47 XXY pattern.

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!