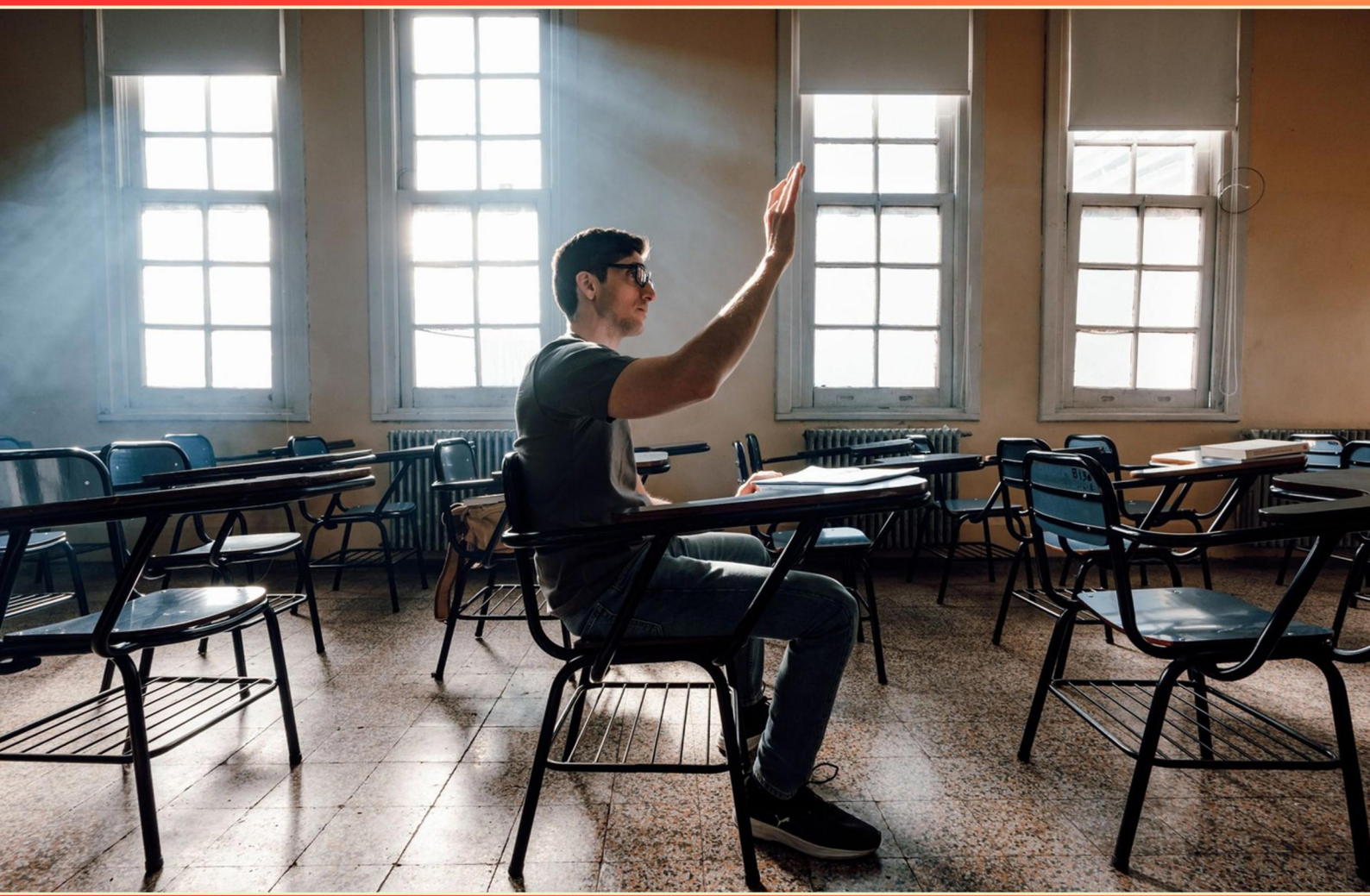
NCCAOM BIOMEDICINE BOARD PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

VISIT US ONLINE FOR THE FULL VERSION STUDY GUIDE

https://nccaombiomedboard.examzify.com

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 16

SAMPLE

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.

SAMPLE

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!

SAMPLE

Questions

SAMPLE

1. What is a typical symptom presentation for a 27-year-old male with right testicular pain, swelling, and fever?

A. Epididymitis

B. Testicular torsion

C. Inguinal hernia

D. Hydrocele

2. What is the main role of vitamin K in the body?

A. Support metabolism

B. Assist in blood clotting

C. Enhance bone health

D. Boost immune function

3. What condition is characterized by an MCV greater than 100?

A. Microcytic anemia

B. Megaloblastic anemia

C. Normocytic anemia

D. Hemolytic anemia

4. What percentage of blood is composed of plasma?

A. 45%

B. 55%

C. 60%

D. 75%

5. What is the time frame associated with measuring or assessing HbA1c levels?

A. It indicates average blood sugar levels over the past month

B. It indicates average blood sugar levels over the past week

C. It indicates average blood sugar levels over the past three months

D. It is irrelevant for diabetes management

SAMPLE

6. What are the classic symptoms of pellagra caused by vitamin B3 deficiency?

A. Dermatitis, dementia, diarrhea

B. Anemia, bruising, fatigue

C. Weakness, confusion, edema

D. Weight loss, insomnia, sensitivity

7. Which characteristic is often found in disorganized speech of individuals with schizophrenia?

A. Consistent topic

B. Clear coherence

C. Jumping between unrelated ideas

D. Direct answers to questions

8. The SAD PERSONS scale is utilized to assess what risk?

A. Alcohol dependence

B. Cognitive decline

C. Suicidal tendencies

D. Obesity

9. In sickle cell anemia, what is the lifespan of a red blood cell?

A. Normal lifespan

B. 30 days

C. 12 days

D. 60 days

10. What is the primary action of bisphosphonates?

A. Enhancing osteoblastic activity

B. Inhibiting osteoclastic activity

C. Promoting calcitonin production

D. Increasing calcium absorption

SAMPLE

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. What is a typical symptom presentation for a 27-year-old male with right testicular pain, swelling, and fever?

A. Epididymitis

B. Testicular torsion

C. Inguinal hernia

D. Hydrocele

The typical symptom presentation of right testicular pain, swelling, and fever is most consistent with epididymitis. This condition, which involves inflammation of the epididymis (the tube that carries sperm from the testes), is commonly associated with manifestations such as unilateral testicular pain and swelling, often accompanied by systemic signs of infection, such as fever. Epididymitis frequently occurs in younger males, especially those who are sexually active, and is often linked to sexually transmitted infections or urinary tract infections. The pain usually develops gradually, and the area may exhibit tenderness and erythema. Along with swelling and fever, these signs lead to a strong clinical suspicion of epididymitis. In contrast, testicular torsion presents with acute onset of severe pain and swelling, often with a swollen, high-riding testicle and lacks systemic infection symptoms like a fever. An inguinal hernia may cause discomfort and swelling but typically does not present with fever or isolated testicular pain. A hydrocele involves fluid accumulation around the testicle and usually does not cause pain or fever, making it less likely given the symptoms described. Thus, the primary characteristics of pain, swelling, fever, and the demographic involved align predominantly with epididym

2. What is the main role of vitamin K in the body?

A. Support metabolism

B. Assist in blood clotting

C. Enhance bone health

D. Boost immune function

The main role of vitamin K in the body is to assist in blood clotting. Vitamin K is essential for the synthesis of certain proteins, known as clotting factors, which are necessary for the blood coagulation process. These proteins help prevent excessive bleeding when injuries occur by enabling the blood to clot effectively. Without sufficient vitamin K, the body would struggle to form proper clots, leading to increased bleeding and difficulty in wound healing. While vitamin K does play a minor role in enhancing bone health by aiding in the regulation of calcium in bones and blood, its most critical and well-established function is related to blood coagulation. In addition, while there are vitamins and nutrients that support metabolism and immune function, these are not the primary roles attributed to vitamin K. Thus, the focus on blood clotting accurately captures the crucial importance of vitamin K in maintaining proper physiological function.

SAMPLE

3. What condition is characterized by an MCV greater than 100?

A. Microcytic anemia

B. Megaloblastic anemia

C. Normocytic anemia

D. Hemolytic anemia

A condition characterized by a mean corpuscular volume (MCV) greater than 100 is known as megaloblastic anemia. This type of anemia typically results from deficiencies in vitamin B12 or folate, leading to the production of abnormally large red blood cells (macrocytes). The enlarged size of these cells is reflected in the increased MCV value. Megaloblastic anemia is often associated with impaired DNA synthesis, which affects the maturation of red blood cells and causes them to be larger than normal. This condition can be detected through a complete blood count (CBC), where an elevated MCV is one of the key indicators. The condition may also present with symptoms like fatigue, weakness, and pallor, along with potential neurological symptoms if vitamin B12 deficiency is involved. In contrast, other types of anemia listed, such as microcytic anemia, normocytic anemia, and hemolytic anemia, do not typically present with such an elevated MCV or are associated with different underlying causes or mechanisms.

4. 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.

SAMPLE

5. What is the time frame associated with measuring or assessing HbA1c levels?

A. It indicates average blood sugar levels over the past month

B. It indicates average blood sugar levels over the past week

C. It indicates average blood sugar levels over the past three months

D. It is irrelevant for diabetes management

The measure of HbA1c levels is specifically designed to provide insight into a person's average blood glucose levels over the past three months. This is because HbA1c reflects the percentage of glycated hemoglobin, which occurs when glucose attaches to hemoglobin in red blood cells. Since red blood cells have a lifespan of about 120 days, the HbA1c measurement is an effective way to gauge long-term glucose control. This three-month time frame is crucial in the management of diabetes. It helps healthcare providers evaluate how well a patient's blood sugar levels have been controlled over time, thus informing treatment decisions and adjustments. Regular monitoring of HbA1c levels aids in assessing the effectiveness of lifestyle changes or medications in managing diabetes and can help prevent potential complications associated with poorly controlled blood sugar levels. In contrast, other time frames mentioned would not provide an accurate representation of long-term glucose control, while dismissing HbA1c as irrelevant in managing diabetes would ignore its importance in monitoring overall glycemic control.

6. What are the classic symptoms of pellagra caused by vitamin B3 deficiency?

A. Dermatitis, dementia, diarrhea

B. Anemia, bruising, fatigue

C. Weakness, confusion, edema

D. Weight loss, insomnia, sensitivity

Pellagra is specifically associated with a deficiency of niacin, also known as vitamin B3. The classic triad of symptoms that define this condition consists of dermatitis, dementia, and diarrhea. Dermatitis typically manifests as a photosensitive rash, especially in areas of the skin that are exposed to sunlight. Dementia can present with various neurological symptoms, including cognitive decline and mood changes, while diarrhea may vary in severity and is often characterized by watery stools. The combination of these three symptoms is what distinctly identifies pellagra, making the answer particularly relevant and accurate in the context of the question regarding the symptoms of vitamin B3 deficiency. Understanding these classic symptoms is crucial for a correct diagnosis and appropriate management of the condition.

SAMPLE

7. Which characteristic is often found in disorganized speech of individuals with schizophrenia?

A. Consistent topic

B. Clear coherence

C. Jumping between unrelated ideas

D. Direct answers to questions

In the context of schizophrenia, disorganized speech is a hallmark symptom that reflects a disruption in thought processes. Individuals with this condition often exhibit a tendency to jump between unrelated ideas, leading to fragmented or incoherent statements. This symptom, known as "derailment" or "loose associations," can result in conversations that lack logical progression and cohesion. The individual's thought processes may be so disorganized that it becomes challenging for others to follow their line of reasoning. When considering the other options, consistent topic and clear coherence would suggest a logical and structured thought process, which is not typical in disorganized speech seen in schizophrenia. Similarly, direct answers to questions imply an organized and focused response, contrasting sharply with the characteristic of jumping between unrelated ideas that typifies the cognitive disruptions experienced by those with this disorder.

8. The SAD PERSONS scale is utilized to assess what risk?

A. Alcohol dependence

B. Cognitive decline

C. Suicidal tendencies

D. Obesity

The SAD PERSONS scale is specifically designed to assess the risk of suicidal tendencies in individuals. This scale is a clinician-administered checklist that helps to evaluate various factors associated with an increased likelihood of suicide. It includes criteria such as sex, age, depression, prior suicide attempt, substance use, and others, which are pertinent for determining an individual's risk based on specific characteristics and history. The focus of the SAD PERSONS scale is on identifying immediate risk factors and protective factors related to suicidality rather than assessing conditions like substance dependence, cognitive decline, or obesity. Each of those other options pertains to different areas of health and behavioral assessments that do not align with the primary aim of evaluating suicide risk. By using the SAD PERSONS scale, healthcare professionals can better understand and address the needs of individuals who may be in crisis due to suicidal ideations or behaviors.

9. In sickle cell anemia, what is the lifespan of a red blood cell?

A. Normal lifespan

B. 30 days

C. 12 days

D. 60 days

In sickle cell anemia, the lifespan of a red blood cell is significantly reduced due to the abnormal hemoglobin (hemoglobin S) present in the cells. Normally, red blood cells have a lifespan of approximately 120 days. However, in sickle cell anemia, the sickling of red blood cells leads to their premature destruction, particularly in the spleen and other organs as they get trapped in small blood vessels. The lifespan of red blood cells in individuals with sickle cell anemia is typically around 10 to 20 days, with many references citing approximately 12 days, which aligns with the chosen answer. This reduced lifespan contributes to the chronic hemolytic anemia seen in sickle cell patients, as the body is unable to produce red blood cells quickly enough to replace those that are destroyed. The other lifespan options, such as 30 days or 60 days, do not reflect the pathological state of red blood cells in sickle cell anemia, as those durations would be more indicative of either slightly shortened lifespans seen in other conditions or normal red blood cell lifespans. Thus, the choice indicating 12 days accurately encapsulates the impact of the disease on red blood cell survival.

SAMPLE

10. What is the primary action of bisphosphonates?

A. Enhancing osteoblastic activity

B. Inhibiting osteoclastic activity

C. Promoting calcitonin production

D. Increasing calcium absorption

Bisphosphonates primarily function by inhibiting osteoclastic activity, which is essential for managing conditions characterized by excessive bone resorption, such as osteoporosis and Paget's disease. Osteoclasts are the cells responsible for bone breakdown, and by inhibiting their activity, bisphosphonates effectively reduce the rate of bone resorption. This results in an overall increase in bone density and a decrease in the risk of fractures, making bisphosphonates a critical medication in the treatment of various bone disorders. While enhancing osteoblastic activity is beneficial for bone formation, that is not the primary action of bisphosphonates. Promoting calcitonin production is more related to the regulatory mechanisms of calcium in the body rather than the direct action of bisphosphonates, and increasing calcium absorption is more relevant to vitamin D or other agents rather than bisphosphonates. Thus, the focus of bisphosphonates on osteoclast inhibition clearly establishes their primary therapeutic role in maintaining bone health.

SAMPLE

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!

SAMPLE