

National Clinical Assessment (NCA) Cellular Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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

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 is a true statement regarding chemotherapy?**
 - A. Chemotherapy exclusively targets cancer cells**
 - B. Solid tumors are more responsive to chemotherapy**
 - C. It reduces the number of cancer cells**
 - D. Monitoring for resistance is unnecessary**
- 2. What is the primary function of the cell membrane?**
 - A. To protect the cell and regulate the movement of substances**
 - B. To synthesize proteins and lipids**
 - C. To store genetic information**
 - D. To generate energy for the cell**
- 3. Which of the following is an important safety precaution when caring for a patient undergoing internal radiation therapy?**
 - A. Distance from patient is important precaution to take**
 - B. Use radiation shielding whenever possible**
 - C. Wear a film badge to monitor radiation exposure**
 - D. Limit amount of time at bedside or in room to as little as possible**
- 4. Which treatment is appropriate for managing osteoporosis in multiple myeloma?**
 - A. Increased physical activity**
 - B. Corticosteroids and chemotherapy**
 - C. Strict bed rest**
 - D. Increased calcium intake only**
- 5. Which of the following should be included in a pain assessment for cancer patients?**
 - A. Documentation of family history**
 - B. Detailed understanding of pain characteristics**
 - C. Assessment of medication consequences only**
 - D. Ignoring the patient's subjective report of pain**

- 6. What is the first step in managing HIT?**
- A. Administer more heparin**
 - B. Start platelet infusions**
 - C. Stop the heparin drip and give protamine sulfate**
 - D. Perform a splenectomy**
- 7. Which condition is associated with increased red blood cell destruction?**
- A. Iron-deficiency anemia**
 - B. Vitamin B12 deficiency**
 - C. Hemolytic anemias**
 - D. Folic acid deficiency**
- 8. What happens during the process of translation in protein synthesis?**
- A. Ribosomes read mRNA to synthesize proteins**
 - B. DNA is replicated**
 - C. tRNA transports lipids to the ribosomes**
 - D. Proteins are broken down into amino acids**
- 9. What is one consequence of a malfunctioning endoplasmic reticulum?**
- A. Improved cell signaling**
 - B. Accurate protein synthesis**
 - C. Accumulation of misfolded proteins**
 - D. Enhanced cellular respiration**
- 10. What do enzymes specifically lower to facilitate reactions?**
- A. Product concentration**
 - B. Temperature**
 - C. Activation energy**
 - D. Substrate availability**

Answers

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

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Explanations

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1. Which is a true statement regarding chemotherapy?

- A. Chemotherapy exclusively targets cancer cells**
- B. Solid tumors are more responsive to chemotherapy**
- C. It reduces the number of cancer cells**
- D. Monitoring for resistance is unnecessary**

Chemotherapy is designed to reduce the number of cancer cells in the body, which is a fundamental aspect of its therapeutic effect. By interfering with the cancer cell cycle, chemotherapy aims to inhibit the growth and proliferation of these cells, ultimately leading to a decrease in their overall population. This reduction can lead to tumor shrinkage, decreased symptoms, and potentially an increase in survival rates for patients with cancer. In the context of the other statements, it's important to recognize their limitations. Chemotherapy does not exclusively target cancer cells; it can also affect normal, healthy cells, particularly those that are fast-dividing, leading to side effects. Solid tumors can be challenging to treat with chemotherapy because they may have inadequate blood supply and a heterogeneous composition that responds differently to treatment. Lastly, monitoring for resistance to chemotherapy is crucial in clinical practice as cancer cells can develop mechanisms to evade the effects of treatment, making resistance a significant obstacle in successful long-term management of cancer.

2. What is the primary function of the cell membrane?

- A. To protect the cell and regulate the movement of substances**
- B. To synthesize proteins and lipids**
- C. To store genetic information**
- D. To generate energy for the cell**

The primary function of the cell membrane is to protect the cell and regulate the movement of substances. The cell membrane, also known as the plasma membrane, serves as a barrier that separates the internal contents of the cell from the external environment. This selective permeability is crucial for maintaining homeostasis within the cell. It allows certain molecules to enter or exit the cell while keeping harmful substances out, thus ensuring that essential nutrients and ions can be taken in and waste products can be expelled. Additionally, the membrane is involved in cell signaling and recognition, playing a role in communication between cells. In contrast, other functions mentioned in the options are performed by different cellular structures. The synthesis of proteins and lipids predominantly occurs in the endoplasmic reticulum and ribosomes, while genetic information is stored in the nucleus. Energy generation primarily occurs in the mitochondria. Therefore, while all functions are vital for the cell's overall operation, the specific role of the cell membrane in protection and regulation of substance movement is fundamental to cellular life.

3. Which of the following is an important safety precaution when caring for a patient undergoing internal radiation therapy?

- A. Distance from patient is important precaution to take**
- B. Use radiation shielding whenever possible**
- C. Wear a film badge to monitor radiation exposure**
- D. Limit amount of time at bedside or in room to as little as possible**

Distance from the patient is a crucial safety precaution when caring for a patient undergoing internal radiation therapy due to the nature of radiation exposure. When patients receive this type of therapy, radioactive materials are placed inside or very close to the tumor. This radiation can emit from the patient and pose a risk to caregivers and visitors. The principle of distance is fundamental in radiation safety: increasing the distance between yourself and the radioactive source decreases exposure to radiation significantly. This aligns with the inverse square law, which states that the intensity of radiation exposure decreases with the square of the distance from the source. Properly applying this precaution can help ensure that healthcare providers and others in the vicinity minimize their radiation exposure while still being able to provide the necessary care to the patient. The safety of the healthcare team is a priority, and maintaining an appropriate distance helps mitigate the risks associated with radiation exposure. Therefore, this answer emphasizes the importance of spatial awareness and safety in radiation therapy settings.

4. Which treatment is appropriate for managing osteoporosis in multiple myeloma?

- A. Increased physical activity**
- B. Corticosteroids and chemotherapy**
- C. Strict bed rest**
- D. Increased calcium intake only**

In the context of managing osteoporosis in patients with multiple myeloma, the use of corticosteroids and chemotherapy is an appropriate treatment strategy. Multiple myeloma often leads to weakened bones, making them more susceptible to fractures and osteoporosis. Corticosteroids are frequently used in the treatment of multiple myeloma due to their anti-inflammatory and immunosuppressive properties, which help manage symptoms and exert effects on the underlying cancer. Additionally, chemotherapy contributes to treating the myeloma itself, which is crucial since reducing the tumor burden can help alleviate some of the metabolic consequences of the disease on bone health. While these interventions can have adverse effects on bone density if used over extended periods, they also serve to manage the underlying condition effectively, thereby indirectly aiding bone health in the long term. Other options like increased physical activity, strict bed rest, and increased calcium intake alone do not sufficiently address the complexity of osteoporosis in the context of active multiple myeloma. Increased physical activity needs to be balanced with the risk of fractures, while strict bed rest can exacerbate bone density loss. Increased calcium intake is essential, but it should be part of a broader treatment plan involving medications that target both myeloma and bone health.

5. Which of the following should be included in a pain assessment for cancer patients?

- A. Documentation of family history**
- B. Detailed understanding of pain characteristics**
- C. Assessment of medication consequences only**
- D. Ignoring the patient's subjective report of pain**

A detailed understanding of pain characteristics is crucial in the pain assessment for cancer patients because it directly informs treatment decisions and pain management strategies. Pain in cancer patients can be multifaceted, including aspects such as location, intensity, quality (sharp, dull, etc.), duration, and factors that exacerbate or relieve the pain. By thoroughly assessing these characteristics, healthcare providers can determine not only the most effective treatment plan, which may involve medication, physical therapy, or other interventions, but also track changes in the pain experience over time. This individualized approach helps in managing not just the physical aspect of pain, but also contributes to the overall quality of life, making it an essential part of comprehensive cancer care. In contrast, other choices aren't sufficient on their own. While family history can be pertinent when considering risk factors for certain types of cancer, it is not directly related to the current experience of pain. Focusing solely on medication consequences neglects the subjective nature of pain and may overlook critical factors affecting a patient's well-being. Likewise, ignoring a patient's subjective report of pain would dismiss their lived experience, which is vital for effective pain management. Understanding pain characteristics enables a patient-centered approach, ensuring that individuals receive the appropriate interventions for their unique pain experiences.

6. What is the first step in managing HIT?

- A. Administer more heparin**
- B. Start platelet infusions**
- C. Stop the heparin drip and give protamine sulfate**
- D. Perform a splenectomy**

The first step in managing heparin-induced thrombocytopenia (HIT) is to stop the heparin drip and give protamine sulfate. When HIT is suspected or diagnosed, the immediate cessation of heparin is critical because it is the trigger for the condition. Continuing heparin can exacerbate the low platelet count and increase the risk of thrombosis, which is counterproductive. Administering more heparin would further compromise the patient, as it can lead to a worsening of the immunologic reaction and its complications. Starting platelet infusions is not a viable option in the context of HIT, as it does not address the underlying issue and may even pose additional risks. A splenectomy is generally a procedure considered in cases of other conditions affecting platelet counts but is not a standard acute management step for HIT. In summary, the key to effective HIT management begins with halting heparin and using protamine sulfate, if necessary, to counteract any heparin effects, thus prioritizing patient safety and initiating the appropriate course of action.

7. Which condition is associated with increased red blood cell destruction?

- A. Iron-deficiency anemia**
- B. Vitamin B12 deficiency**
- C. Hemolytic anemias**
- D. Folic acid deficiency**

The condition associated with increased red blood cell destruction is hemolytic anemias. Hemolytic anemias are characterized by the premature breakdown of red blood cells, which can occur due to various causes such as autoimmune disorders, certain infections, genetic disorders, or exposure to toxic substances. This destruction leads to a reduction in the number of circulating red blood cells, which can result in symptoms of anemia, such as fatigue, pallor, and shortness of breath. In contrast, conditions like iron-deficiency anemia, vitamin B12 deficiency, and folic acid deficiency are primarily related to inadequate production of red blood cells or deficiencies in important nutrients required for erythropoiesis (the production of red blood cells). These conditions do not involve increased destruction of red blood cells but rather point to a lack of essential components needed to produce healthy and sufficient red blood cells in the first place.

8. What happens during the process of translation in protein synthesis?

- A. Ribosomes read mRNA to synthesize proteins**
- B. DNA is replicated**
- C. tRNA transports lipids to the ribosomes**
- D. Proteins are broken down into amino acids**

During translation in protein synthesis, ribosomes play a crucial role in reading the sequence of messenger RNA (mRNA) to synthesize proteins. This process involves translating the genetic code carried by the mRNA into a specific sequence of amino acids, which will ultimately fold and function as a protein. The ribosome facilitates the binding of transfer RNA (tRNA), which carries the appropriate amino acids corresponding to each codon (a sequence of three nucleotides) on the mRNA. As the ribosome progresses along the mRNA strand, tRNA molecules bring amino acids in the correct order, aiding in the formation of peptide bonds between them. This process continues until a stop codon is reached, signaling the termination of protein synthesis. The other choices reflect processes that do not occur during translation. For instance, DNA replication is a separate process that occurs before transcription and translation, specifically during cell division. Furthermore, tRNA is involved in transporting amino acids, not lipids, to ribosomes. Finally, breaking down proteins into amino acids describes catabolic processes, such as protein degradation, rather than the synthesis of proteins during translation. Thus, the correct answer focuses on the fundamental role of ribosomes in synthesizing proteins based on mRNA instructions.

9. What is one consequence of a malfunctioning endoplasmic reticulum?

- A. Improved cell signaling**
- B. Accurate protein synthesis**
- C. Accumulation of misfolded proteins**
- D. Enhanced cellular respiration**

The endoplasmic reticulum (ER) plays a crucial role in the synthesis and folding of proteins. When the ER malfunctions, one significant consequence is the accumulation of misfolded proteins. The ER is responsible for properly folding proteins and ensuring they are functional before they are transported to their next destination within the cell or secreted outside of it. If the folding process is disrupted due to ER stress, protein misfolding can occur, leading to a backlog of improperly folded proteins. The accumulation of these misfolded proteins can trigger the unfolded protein response (UPR), a cellular stress response aimed at restoring normal function by enhancing the protein-folding capacity of the ER or, if the stress is unresolved, leading to cell death. Therefore, the connection between a malfunctioning endoplasmic reticulum and the accumulation of misfolded proteins underscores the critical importance of the ER in maintaining cellular health and function.

10. What do enzymes specifically lower to facilitate reactions?

- A. Product concentration**
- B. Temperature**
- C. Activation energy**
- D. Substrate availability**

Enzymes are biological catalysts that play a crucial role in accelerating chemical reactions within living organisms. The primary way they facilitate these reactions is by lowering the activation energy. Activation energy is the energy barrier that must be overcome for a reaction to occur. By reducing this energy requirement, enzymes make it easier for reactants to interact and form products, thus increasing the rate of reaction without being consumed in the process. Enzymes achieve this through various mechanisms, including stabilizing transition states, providing an optimal environment for reactions, and even orienting substrates in a way that enhances their reactivity. This ability to lower activation energy allows biochemical processes to proceed at a rate that is compatible with life, as many reactions would be too slow to sustain biological functions without the presence of enzymes. Other options refer to components or conditions related to chemical reactions but do not accurately describe the primary role of enzymes. Product concentration relates to the outcome of reactions, temperature can influence reaction rates but is not specific to enzyme action, and substrate availability addresses how much substrate is present rather than how enzymes facilitate reactions. Thus, the most accurate choice in the context of enzymatic function is the reduction of activation energy.

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://ncacellular.examzify.com>

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