

CHEMOTHERAPY BIOTHERAPY CERTIFICATION ONS PRACTICE TESTQ (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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

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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

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- 1. What is the overall purpose of biotherapy in cancer treatment?**
 - A. To minimize side effects of chemotherapy
 - B. To enhance the immune response against cancer cells
 - C. To directly destroy tumor cells
 - D. To provide nutritional support during treatment
- 2. What is a defining feature of cell cycle non-specific drugs?**
 - A. They are effective only during the G2 phase
 - B. They act on dividing and resting cells
 - C. They can only be administered intravenously
 - D. They do not cause hair loss
- 3. During which phase of the cell cycle do mitotic inhibitors demonstrate their effects?**
 - A. G1 phase
 - B. G2 phase
 - C. S phase
 - D. M phase
- 4. Why are age-specific dosages important in pediatric chemotherapy?**
 - A. Children usually prefer smaller doses
 - B. Pediatric physiology varies significantly from adults
 - C. Children have a higher pain tolerance
 - D. Children respond better to larger doses
- 5. What is the recommended action if a patient exhibits signs of anaphylaxis during treatment?**
 - A. Administer oxygen and call for emergency help
 - B. Continue treatment and monitor
 - C. Provide the patient with a snack to stabilize them
 - D. Check the patient's chart for allergies

- 6. What class of drugs does not affect the cell cycle by interrupting DNA synthesis?**
- A. Antimetabolites
 - B. Alkylating agents
 - C. Topoisomerase inhibitors
 - D. Antitumor antibiotics
- 7. At which cell cycle phases do alkylating agents demonstrate maximal activity?**
- A. G0 and G1 phases
 - B. G2-M phase and near the G1-S phase
 - C. S and G1 phases
 - D. Only during mitosis
- 8. Which type of drug typically has a continuous dosing schedule in chemotherapy?**
- A. Alkylating agents
 - B. Topoisomerase inhibitors
 - C. Antitumor antibiotics
 - D. Vinca plant alkaloids
- 9. Why might a patient need to adjust their dietary habits while undergoing chemotherapy?**
- A. To increase caloric intake for weight gain
 - B. To incorporate more protein to combat fatigue
 - C. To manage gastrointestinal side effects and maintain nutrition
 - D. To prepare for surgery following treatment
- 10. What is the most common limiting effect associated with chemotherapy?**
- A. Nausea and vomiting
 - B. Myelosuppression
 - C. Fatigue
 - D. Dermatological reactions

Answers

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

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Explanations

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1. What is the overall purpose of biotherapy in cancer treatment?

- A. To minimize side effects of chemotherapy
- B. To enhance the immune response against cancer cells**
- C. To directly destroy tumor cells
- D. To provide nutritional support during treatment

The overall purpose of biotherapy in cancer treatment is to enhance the immune response against cancer cells. Biotherapy, also known as immunotherapy, involves using the body's own immune system to fight cancer. This form of treatment can take various approaches, such as monoclonal antibodies, vaccines, immune checkpoint inhibitors, and cytokines, all designed to stimulate or enhance the natural defenses of the immune system. By targeting and bolstering the body's immune response, biotherapy aims to identify and destroy cancer cells more effectively than conventional treatments. This method can also help the immune system remember cancer cells, potentially offering long-term protection against recurrence. While biotherapy might also contribute to minimizing side effects or providing supportive care, its primary role is focused on activating and strengthening the immune response against tumors. This distinguishes it from other types of cancer treatments, which may directly destroy tumor cells or provide nutritional support.

2. What is a defining feature of cell cycle non-specific drugs?

- A. They are effective only during the G2 phase
- B. They act on dividing and resting cells**
- C. They can only be administered intravenously
- D. They do not cause hair loss

The defining feature of cell cycle non-specific drugs is that they have the ability to act on both dividing and resting cells. This characteristic sets them apart from cell cycle-specific agents, which are effective only during particular phases of the cell cycle, such as the G1, S, or G2 phases. Non-specific drugs can target cancer cells regardless of whether they are actively dividing or in a quiescent state, making them versatile in their application against a variety of tumors. This broad activity is particularly beneficial for treating tumors that may have a mix of actively dividing and resting cells. It provides an opportunity to affect a larger percentage of the tumor population, potentially leading to better treatment outcomes. This property is crucial in oncology, as solid tumors often have regions of cells in various phases of the cell cycle. The other options do not accurately describe the nature of cell cycle non-specific drugs. Their effectiveness is not limited to a specific phase, they can be administered via different routes beyond just intravenous, and hair loss, while a common side effect of many chemotherapy agents, is not a defining characteristic of non-specific drugs.

3. During which phase of the cell cycle do mitotic inhibitors demonstrate their effects?

- A. G1 phase
- B. G2 phase
- C. S phase
- D. M phase**

Mitotic inhibitors are a class of drugs that specifically target the M phase of the cell cycle, which is when mitosis, or cell division, occurs. These inhibitors work by disrupting the process of spindle formation necessary for chromosomal segregation, effectively preventing the cell from completing mitosis. This action exploits the critical period when cells are preparing to divide, thereby halting the progression of the cell cycle and leading to cell death, particularly in rapidly dividing cancer cells. While the other phases, such as G1, G2, and S, involve important preparations for DNA synthesis and cell division, mitotic inhibitors do not exert their primary effects during these phases. Instead, their action is specifically focused on disrupting the actual process of mitosis, emphasizing their unique role in cancer treatment. Understanding the phase in which these drugs operate is crucial for effectively using them in chemotherapy regimens.

4. Why are age-specific dosages important in pediatric chemotherapy?

- A. Children usually prefer smaller doses
- B. Pediatric physiology varies significantly from adults**
- C. Children have a higher pain tolerance
- D. Children respond better to larger doses

Age-specific dosages are crucial in pediatric chemotherapy because the physiology of children differs significantly from that of adults. Pediatric patients are not just smaller versions of adults; their organs, metabolism, and body composition can drastically affect how drugs are absorbed, distributed, metabolized, and excreted. The developmental stages of children introduce variation in drug pharmacokinetics and pharmacodynamics. For instance, younger children may have immature liver and kidney functions, which play key roles in drug metabolism and clearance. Additionally, differences in total body water and fat composition can alter the distribution of medications. These factors highlight the importance of calculating chemotherapy doses based on a child's age, weight, and developmental stage to ensure efficacy while minimizing toxicity. Administering adult dosages without adjustments can lead to under-treatment or excessive side effects in pediatric patients.

5. What is the recommended action if a patient exhibits signs of anaphylaxis during treatment?

- A. Administer oxygen and call for emergency help**
- B. Continue treatment and monitor
- C. Provide the patient with a snack to stabilize them
- D. Check the patient's chart for allergies

When a patient exhibits signs of anaphylaxis during treatment, the immediate priority is to ensure the patient's safety and address the life-threatening reaction promptly. Administering oxygen and calling for emergency help is the correct action because anaphylaxis can lead to airway obstruction, difficulty breathing, and a drop in blood pressure, all of which require rapid medical intervention. Administering oxygen helps to improve oxygenation, and calling for emergency help ensures that appropriate medical assistance is on its way, which may include interventions like epinephrine administration and advanced airway management. Taking these actions can be life-saving and should be the first response when signs of anaphylaxis are noted. Continuing treatment or checking the patient's chart for allergies is inappropriate in this situation, as it can delay critical care. Providing a snack is also not relevant and could potentially exacerbate the situation if the patient's airway is compromised or if they are unable to swallow due to swelling.

6. What class of drugs does not affect the cell cycle by interrupting DNA synthesis?

- A. Antimetabolites**
- B. Alkylating agents
- C. Topoisomerase inhibitors
- D. Antitumor antibiotics

The correct response identifies antimetabolites as a class of drugs that primarily disrupt DNA synthesis. However, this class actually interferes specifically during the S phase of the cell cycle by mimicking normal metabolites, thereby inhibiting the synthesis of nucleotides necessary for DNA replication. In contrast, alkylating agents function by adding alkyl groups to DNA, resulting in cross-links that prevent DNA replication and transcription. Topoisomerase inhibitors work by interfering with the enzymes that manage the topology of DNA, causing strand breaks and preventing proper DNA replication. Antitumor antibiotics also work by intercalating into DNA, disrupting replication and transcription processes. Ultimately, while antimetabolites do target the process of DNA synthesis, the characterization of which class disrupts the cell cycle without affecting DNA synthesis may require reevaluation. Alkylating agents, topoisomerase inhibitors, and antitumor antibiotics all impede forms of DNA replication through distinct mechanisms throughout various phases of the cell cycle.

7. At which cell cycle phases do alkylating agents demonstrate maximal activity?

- A. G0 and G1 phases
- B. G2-M phase and near the G1-S phase**
- C. S and G1 phases
- D. Only during mitosis

Alkylating agents demonstrate maximal activity primarily during the G2-M phase and near the G1-S phase of the cell cycle. These agents work by forming covalent bonds with DNA, leading to cross-linking and disruption of the DNA structure, which ultimately interferes with the cell's ability to divide and propagate. The G2-M phase is critical for the normal preparation and execution of mitosis, where DNA damage can result in cell cycle arrest and apoptosis. Additionally, as the cell transitions from G1 to S phase, the DNA is being prepared for replication. Alkylating agents can effectively target cells at these junctures, significantly impacting their viability and reproductive capacity. The activity of alkylating agents is not as pronounced in the G0 phase, where cells are in a quiescent state and not actively dividing, nor is it limited to the mitotic phase alone. Understanding the timing of the cell cycle phases where these agents are most effective can aid in optimizing treatment regimens for various malignancies.

8. Which type of drug typically has a continuous dosing schedule in chemotherapy?

- A. Alkylating agents
- B. Topoisomerase inhibitors
- C. Antitumor antibiotics**
- D. Vinca plant alkaloids

In chemotherapy, antitumor antibiotics are known for often having a continuous dosing schedule. This is primarily due to their pharmacokinetic properties, which allow for a consistent level of medication in the body to effectively target cancer cells. Continuous dosing can help maintain therapeutic plasma concentrations, potentially leading to improved efficacy against tumors while minimizing the chances of the cancer developing resistance by avoiding drug holidays. Antitumor antibiotics like doxorubicin can have specific schedules where continuous infusion may be employed, especially in certain protocols that maximize treatment effectiveness while managing toxicity. Understanding the nature of the other drug classes is crucial. Alkylating agents, while effective, typically employ intermittent schedules to counteract toxicity and allow recovery of normal cells. Topoisomerase inhibitors and vinca plant alkaloids also mostly utilize bolus dosing or intermittent regimens based on their toxic profiles and the need for recovery periods between cycles. By grasping these scheduling nuances, one can appreciate the rationale behind the selection of specific treatment regimens in chemotherapy for optimal patient outcomes.

9. Why might a patient need to adjust their dietary habits while undergoing chemotherapy?

- A. To increase caloric intake for weight gain
- B. To incorporate more protein to combat fatigue
- C. To manage gastrointestinal side effects and maintain nutrition**
- D. To prepare for surgery following treatment

Adjusting dietary habits during chemotherapy is essential for patients primarily to manage gastrointestinal side effects and maintain proper nutrition. Chemotherapy can significantly impact the gastrointestinal system, leading to side effects such as nausea, vomiting, diarrhea, and changes in taste or appetite. These effects can make it challenging for patients to consume adequate nutrition. By modifying their diet, patients can help alleviate these symptoms and ensure they receive the necessary nutrients to support their recovery and overall health. For example, incorporating bland foods can mitigate nausea, while plenty of fluids can help address dehydration due to diarrhea. Furthermore, a well-balanced diet can strengthen the immune system and enhance the body's ability to cope with the stresses of treatment. While increasing caloric intake for weight gain, incorporating more protein to combat fatigue, and preparing for surgery are important considerations, they are generally secondary to the immediate need for managing side effects and maintaining sufficient nutrition throughout the chemotherapy process.

10. What is the most common limiting effect associated with chemotherapy?

- A. Nausea and vomiting
- B. Myelosuppression**
- C. Fatigue
- D. Dermatological reactions

Myelosuppression is considered the most common limiting effect associated with chemotherapy due to its significant impact on the bone marrow's ability to produce blood cells. This condition leads to reductions in red blood cells (anemia), white blood cells (increased risk of infection), and platelets (risk of bleeding). Many chemotherapy agents are cytotoxic and target rapidly dividing cells, which include both cancer cells and normal cells in the bone marrow. As a result, patients frequently experience myelosuppression, which can limit their ability to continue treatment or necessitate dose adjustments or delays. Nausea and vomiting, while prevalent side effects, can often be managed with antiemetic medications, allowing patients to continue their chemotherapy regimen more effectively. Fatigue is also a common issue, particularly due to the cumulative effects of treatment, but it is generally viewed as less critical in terms of limiting treatment. Dermatological reactions can occur but are typically less prevalent compared to hematologic toxicities related to myelosuppression. Thus, myelosuppression stands out as the most frequent and clinically significant limitation encountered in chemotherapy administration.

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://ons-chemotherapybiotherapy.examzify.com>

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

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