

# Chemotherapy and Radiation Therapy Practice Test (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

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1. Topoisomerase inhibitors function by inhibiting topoisomerases, which normally perform what role?
  - A. Cutting and pasting RNA
  - B. Breaking and repairing DNA to allow flexibility during replication
  - C. Stabilizing microtubules
  - D. Methylating DNA
  
2. Perfusion chemotherapy examples are from which drug class?
  - A. Alkylating drugs
  - B. Antimetabolites
  - C. Anthracyclines
  - D. Platinum compounds
  
3. Vesicant chemotherapy drugs are characterized by...
  - A. Vesicant chemotherapy drugs cause severe local tissue breakdown and necrosis if infiltrated into skin
  - B. Vesicants cause only mild irritation
  - C. Vesicants have no tissue damage
  - D. Vesicants cause systemic effects only
  
4. Which action is recommended to protect health care staff from radiation hazards when caring for a patient receiving brachytherapy?
  - A. Use shielding when providing care to the patient
  - B. Increase time spent in direct contact with the patient to monitor status
  - C. Stand very close to the patient during care tasks
  - D. Remove all protective measures to speed procedures
  
5. What is chemotherapy?
  - A. The use of hormones to treat cancer
  - B. The use of chemicals as a systemic therapy for cancer
  - C. Localized radiation therapy
  - D. Surgery to remove tumors

6. Which drug is listed as an intraarterial chemotherapy example?
- A. Decarbazine
  - B. Bleomycin
  - C. Methotrexate
  - D. Capecitabine
7. Bleomycin is typically administered by which route in chemotherapy?
- A. Intravenous
  - B. Intramuscular
  - C. Subcutaneous
  - D. Oral
8. Which cardiac complication can occur as an acute toxicity of some chemotherapy regimens?
- A. Dysrhythmias
  - B. Hypertension
  - C. Hyperglycemia
  - D. Myocardial infarction
9. Which statement describes how to palliate pain in stage 4 cancer undergoing chemotherapy?
- A. The goal is to relieve pain and improve quality of life
  - B. The goal is to cure the cancer
  - C. The goal is to prevent all side effects
  - D. The goal is to maintain the current quality of life without treatment
10. The term for painful swallowing is which?
- A. Odynophagia
  - B. Anorexia
  - C. Dysgeusia
  - D. Xerostomia

## Answers

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

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## Explanations

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1. Topoisomerase inhibitors function by inhibiting topoisomerases, which normally perform what role?

- A. Cutting and pasting RNA
- B. Breaking and repairing DNA to allow flexibility during replication
- C. Stabilizing microtubules
- D. Methylating DNA

Topoisomerases temporarily cut DNA to relieve torsional strain that builds up as the helix unwinds during replication and transcription. They then reseal the breaks, allowing the DNA strands to pass through each other and return to a relaxed state. This break-and-reseal mechanism enables the DNA to unkink and untangle, keeping replication and transcription running smoothly. Inhibitors block the resealing step, causing DNA breaks that are particularly lethal to dividing cells. The other options describe processes that topoisomerases do not perform: RNA cutting/pasting, stabilizing microtubules, or DNA methylation.

2. Perfusion chemotherapy examples are from which drug class?

- A. Alkylating drugs
- B. Antimetabolites
- C. Anthracyclines
- D. Platinum compounds

Perfusion chemotherapy aims to deliver high concentrations of a drug directly to a localized area, such as a limb or the peritoneal cavity, to maximize tumor kill while reducing systemic toxicity. Alkylating agents fit this approach especially well because they can be given in high regional doses and remain effective under the hyperthermic conditions often used during perfusion. Melphalan, a classic alkylating agent, is a standard choice for isolated limb perfusion due to its strong DNA cross-linking activity, good tumor penetration, and rapid systemic clearance when infused regionally. This combination of properties makes alkylating drugs the typical class associated with perfusion techniques. While other drug classes can be used in regional therapies in certain scenarios, they are not as emblematic of perfusion chemotherapy as alkylating agents.

3. Vesicant chemotherapy drugs are characterized by...

- A. Vesicant chemotherapy drugs cause severe local tissue breakdown and necrosis if infiltrated into skin
- B. Vesicants cause only mild irritation
- C. Vesicants have no tissue damage
- D. Vesicants cause systemic effects only

Vesicant chemotherapy drugs are defined by their ability to cause serious tissue injury when they escape from the vein into surrounding tissue. If a vesicant leaks into the skin, it damages cells and blood vessels, leading to rapid tissue necrosis, ulceration, and potential loss of tissue. That local, destructive effect is the key feature, which is why the statement describing severe local tissue breakdown and necrosis upon infiltration is the best fit. While these drugs can also have systemic toxicity, the defining concern with vesicants is the potential for severe local damage at the infusion site. The other options describe scenarios that don't capture this important local tissue-damage risk.

4. Which action is recommended to protect health care staff from radiation hazards when caring for a patient receiving brachytherapy?

- A. Use shielding when providing care to the patient
- B. Increase time spent in direct contact with the patient to monitor status
- C. Stand very close to the patient during care tasks
- D. Remove all protective measures to speed procedures

Protecting staff from radiation during brachytherapy relies on reducing exposure with a physical barrier. Shielding, such as lead or other protective barriers and protective garments, blocks or absorbs much of the scatter and leakage radiation that can reach caregivers as they provide care to the patient. This lowers the dose to the staff while still allowing essential monitoring and assistance. In contrast, spending more time in direct contact, standing very close to the patient, or removing protective measures would all increase the radiation dose to the caregiver. The recommended practice follows the principle of ALARA—keep exposure as low as reasonably achievable—using shielding as a primary way to reduce dose during patient care.

5. What is chemotherapy?

- A. The use of hormones to treat cancer
- B. The use of chemicals as a systemic therapy for cancer
- C. Localized radiation therapy
- D. Surgery to remove tumors

Chemotherapy means using chemicals that travel through the bloodstream to reach and kill cancer cells all around the body. This systemic approach is what lets it treat cancers that have spread or could spread beyond the original site, and it's often used before surgery to shrink tumors or after to help prevent recurrence. It's different from localized treatments: radiation targets a specific area, and surgery removes tumors directly. Hormonal therapies use hormones or hormone-blocking agents, not broad-acting cytotoxic chemicals. So chemotherapy is the systemic use of chemical agents to treat cancer.

6. Which drug is listed as an intraarterial chemotherapy example?

- A. Decarbazine
- B. Bleomycin
- C. Methotrexate
- D. Capecitabine

Delivering chemotherapy directly into the artery that feeds a tumor creates a high local drug concentration in the tumor while limiting systemic exposure. Dacarbazine is used in some regional or intraarterial infusion protocols to treat localized disease, making it a representative example of intraarterial chemotherapy. The other agents are more commonly given by systemic routes (capecitabine is an oral prodrug of 5-FU; methotrexate is typically IV or intrathecal; bleomycin is usually systemic or used in other local therapies), so they are less typical examples of intraarterial chemotherapy.

7. Bleomycin is typically administered by which route in chemotherapy?

- A. Intravenous
- B. Intramuscular
- C. Subcutaneous
- D. Oral

Bleomycin must be given by injection rather than by mouth because it isn't well absorbed from the gastrointestinal tract. Intramuscular injection has traditionally provided reliable systemic absorption and was commonly used in many regimens, avoiding the need for IV access in all patients. While some protocols may use IV administration, intramuscular is the typical route described for this drug. Subcutaneous and oral routes are not standard for bleomycin due to absorption and practicality concerns.

8. Which cardiac complication can occur as an acute toxicity of some chemotherapy regimens?

- A. Dysrhythmias
- B. Hypertension
- C. Hyperglycemia
- D. Myocardial infarction

Chemo can cause acute disturbances in the heart's rhythm because several regimens affect the heart's electrical activity and can disrupt electrolyte balance during or right after infusion. This makes dysrhythmias a common acute cardiac toxicity seen with some chemotherapy drugs. Electrolyte shifts (like low potassium or magnesium) or direct effects on cardiac ion channels can trigger premature beats, fast or irregular rhythms, or QT prolongation with a risk of dangerous arrhythmias. Hypertension or hyperglycemia can occur with cancer therapy in some contexts (for example, steroids or fluid shifts) but they are not typical acute cardiac toxicities in the same sense as sudden rhythm problems. Myocardial infarction is not a direct, common acute toxicity of chemotherapy, though severe complications can happen in rare circumstances; the more characteristic acute cardiac effect to recognize is dysrhythmia.

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9. Which statement describes how to palliate pain in stage 4 cancer undergoing chemotherapy?

- A. The goal is to relieve pain and improve quality of life
- B. The goal is to cure the cancer
- C. The goal is to prevent all side effects
- D. The goal is to maintain the current quality of life without treatment

Palliative care in advanced cancer centers on relief of symptoms and preserving or improving quality of life, even when a cure isn't possible. When chemotherapy is used in stage IV disease, the aim is often symptom control—particularly pain—along with maintaining function and comfort. That's why the statement about relieving pain and improving quality of life best captures the goal in this context: the treatment is focused on comfort and daily well-being rather than eradicating the cancer. Curing the cancer is generally not the goal in stage IV disease, as metastasis often makes a cure unlikely. Preventing all side effects is unrealistic; treatment plans aim to minimize them but cannot guarantee they won't occur. Maintaining the current quality of life without treatment conflicts with the scenario where chemotherapy is being used to palliate symptoms and support well-being during ongoing care.

10. The term for painful swallowing is which?

- A. Odynophagia
- B. Anorexia
- C. Dysgeusia
- D. Xerostomia

Painful swallowing is called odynophagia. The term comes from *odyn-* meaning pain and *-phagia* meaning swallowing, so it directly describes the symptom of pain during swallowing. This helps distinguish it from other similar terms: anorexia refers to loss of appetite, dysgeusia is a distorted sense of taste, and xerostomia means a dry mouth. When someone experiences odynophagia, it can point to irritation or infection in the mouth, throat, or esophagus, especially in individuals with immune suppression or esophageal irritation.

## 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](mailto:hello@examzify.com).

Or visit your dedicated course page for more study tools and resources:

<https://chemoandradtherapy.examzify.com>

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

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