

PHARMACOLOGY AND PATHOPHYSIOLOGY: HYPERTENSION, ALLERGIES, BURNS, AND HAIR DISORDERS PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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 Parkland formula and how is it applied for burn fluid resuscitation?**
- A. $4 \text{ mL} \times \text{body weight (kg)} \times \% \text{TBSA burned in the first 24 hours}$; half given in the first 8 hours from time of burn and the rest over the next 16 hours, with adjustments based on urine output and hemodynamics.
 - B. $2 \text{ mL} \times \text{body weight} \times \% \text{TBSA burned over 48 hours}$.
 - C. $10 \text{ mL} \times \text{weight} \times \text{age}$.
 - D. Fluid resuscitation is not required for burns.
- 2. Which preventive strategy reduces contractures in burn injuries?**
- A. Early wound coverage and physical therapy
 - B. Prolonged immobilization
 - C. Delayed wound coverage
 - D. Inadequate nutrition
- 3. Which heart layer is the outermost layer of the heart?**
- A. Endocardium
 - B. Epicardium
 - C. Myocardium
 - D. Pericardium
- 4. Theophylline is used for which conditions?**
- A. Beta-agonist bronchodilator
 - B. Corticosteroid
 - C. Asthma and COPD as a methylxanthine bronchodilator
 - D. Leukotriene receptor antagonist
- 5. Loratadine is sold under which brand name?**
- A. Benadryl
 - B. Claritin
 - C. Zyrtec
 - D. Allegra

- 6. Burn severity is primarily determined by which factors?**
- A. Color and odor
 - B. Size and depth
 - C. Age and gender
 - D. Location and pain
- 7. Which statement best describes the role of alpha-1 blockers in hypertension?**
- A. They are first-line treatments for essential hypertension.
 - B. They lower peripheral vascular resistance and BP but cause orthostatic hypotension and first-dose syncope; generally not first-line, used for BPH or certain indications.
 - C. They do not cause orthostatic hypotension.
 - D. They cause hyperkalemia as a common adverse effect.
- 8. Which statement about adverse effects of finasteride is accurate?**
- A. Finasteride may cause sexual side effects and fetal risks; minoxidil may cause scalp irritation and unwanted hair growth beyond treated areas
 - B. Finasteride has no sexual side effects; minoxidil has no scalp irritation
 - C. Both drugs are free of adverse effects
 - D. Finasteride cures baldness instantly
- 9. Why is the diaphysis often the site of fractures?**
- A. It has a poor blood supply and joint involvement
 - B. It has a good blood supply and no joint involvement
 - C. It is near a growth plate
 - D. It contains mainly red marrow
- 10. Which statement accurately contrasts thiazide diuretics with loop diuretics in hypertension management?**
- A. Thiazides inhibit the Na–Cl cotransporter in the distal convoluted tubule, producing milder diuresis with risk of hyponatremia and hypokalemia; commonly used for essential hypertension and mild edema.
 - B. Thiazides inhibit NKCC in the thick ascending limb; potent diuresis; risk hypokalemia and hypomagnesemia; used for edema from heart failure.
 - C. Loop diuretics inhibit Na–Cl cotransporter in distal tubule; mild diuresis.
 - D. Loop diuretics block ENaC in collecting duct; mild diuresis.

Answers

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

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Explanations

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1. What is the Parkland formula and how is it applied for burn fluid resuscitation?

- A. $4 \text{ mL} \times \text{body weight (kg)} \times \% \text{TBSA burned in the first 24 hours}$; half given in the first 8 hours from time of burn and the rest over the next 16 hours, with adjustments based on urine output and hemodynamics.
- B. $2 \text{ mL} \times \text{body weight} \times \% \text{TBSA burned over 48 hours}$.
- C. $10 \text{ mL} \times \text{weight} \times \text{age}$.
- D. Fluid resuscitation is not required for burns.

Fluid resuscitation after a significant burn is about restoring circulating volume as the body's capillaries leak fluid. The Parkland formula provides a practical way to estimate how much crystalloid is needed in the first 24 hours. It uses lactated Ringer's solution and prescribes a total amount equal to 4 mL per kilogram of body weight per percent of burn area (TBSA). Half of that total is given in the first 8 hours from the time of burn, and the remaining half over the next 16 hours. Time since injury matters, so if you arrive later, you base the schedule on how long ago the burn occurred. You don't just send a fixed amount; you titrate based on how the patient is perfusing, using urine output and hemodynamic status as guides. A common target in adults is about 0.5 mL/kg/hour of urine output, adjusting fluid rate to avoid under-resuscitation or over-resuscitation. For example, a 70 kg patient with 40% TBSA burned would need about $11,200 \text{ mL}$ in the first 24 hours ($4 \times 70 \times 40$). Split, that's $5,600 \text{ mL}$ in the first 8 hours and $5,600 \text{ mL}$ over the next 16 hours. This approach aligns with the option describing the $4 \text{ mL} \times \text{kg} \times \% \text{TBSA}$ calculation, the 50% in the first 8 hours and 50% in the following 16 hours, with adjustments based on urine output and hemodynamics. Other formulations or statements that use different multipliers, longer time frames, or deny fluid resuscitation don't reflect the standard burn resuscitation practice.

2. Which preventive strategy reduces contractures in burn injuries?

- A. Early wound coverage and physical therapy
- B. Prolonged immobilization
- C. Delayed wound coverage
- D. Inadequate nutrition

Preventing burn-related contractures comes down to preserving joint motion as the wound heals. When skin is burned, scar tissue tends to contract as it forms, shortening surrounding tissues if movement is restricted and the wound takes time to close. Getting the wound covered early stabilizes the skin barrier, reduces prolonged inflammation and edema, and lowers infection risk, which together create a more favorable environment for healing. Once coverage is achieved, starting physical therapy right away allows gentle range-of-motion exercises and stretching to be performed, helping to maintain tissue length and prevent the tight, fixed positions that become contractures. Prolonged immobilization worsens the problem because the joints stay in a fixed position, promoting stiffness and shortening of connective tissue. Delayed wound coverage prolongs the inflammatory phase and edema, increasing scar formation and the potential for contractures. While good nutrition supports overall healing, it by itself does not specifically prevent contractures; the direct preventive strategy is about timely coverage and active rehabilitation to maintain mobility.

3. Which heart layer is the outermost layer of the heart?

- A. Endocardium
- B. Epicardium**
- C. Myocardium
- D. Pericardium

The outermost layer of the heart itself is the epicardium, which is the visceral layer of the serous pericardium. This layer covers the external surface of the heart and is continuous with the parietal layer of the serous pericardium at the great vessels. The heart wall from inside to outside is endocardium, myocardium, then epicardium. The pericardial sac (fibrous plus serous pericardium) surrounds the heart, but it is not part of the heart wall itself. So epicardium sits as the outermost layer of the heart muscle and its surface.

4. Theophylline is used for which conditions?

- A. Beta-agonist bronchodilator
- B. Corticosteroid
- C. Asthma and COPD as a methylxanthine bronchodilator**
- D. Leukotriene receptor antagonist

Theophylline is a methylxanthine bronchodilator used to help open the airways in asthma and COPD. It works by inhibiting phosphodiesterase, which raises cAMP levels in airway smooth muscle and promotes relaxation, and by blocking adenosine receptors that can promote bronchoconstriction. This combination makes it effective as a bronchodilator in these conditions. It's distinct from other options: beta-agonists provide rapid bronchodilation by directly stimulating beta-2 receptors; corticosteroids reduce airway inflammation through gene-mediated effects; and leukotriene receptor antagonists block leukotriene signals involved in inflammation and bronchoconstriction. Because of its narrow therapeutic index and potential drug interactions, theophylline is used less often today, but it remains categorized as a methylxanthine bronchodilator for asthma and COPD.

5. Loratadine is sold under which brand name?

- A. Benadryl
- B. Claritin**
- C. Zyrtec
- D. Allegra

Brand names for antihistamines help you recognize the specific drug you're using. Loratadine is sold under the brand name Claritin, a non-sedating second-generation antihistamine used for allergic symptoms. Other brands map to different antihistamines: Benadryl is diphenhydramine (older, more sedating), Zyrtec is cetirizine, and Allegra is fexofenadine. Knowing that Claritin = loratadine helps you read labels and understand exactly which medication you're taking.

6. Burn severity is primarily determined by which factors?

- A. Color and odor
- B. Size and depth**
- C. Age and gender
- D. Location and pain

Burn severity is determined primarily by depth of tissue injury and the extent of the burned area. Depth shows how many skin layers are destroyed—superficial burns have less tissue damage and heal more easily, while deeper burns damage more structures and carry higher risks of infection, fluid loss, and scarring. The extent, or the percentage of body surface area burned, matters because a larger area means greater fluid shifts, higher metabolic demands, and a greater overall risk to the patient, often requiring more intensive fluid resuscitation and care. Color and odor can offer clues about depth, but they're not reliable on their own. Age and gender influence healing risk and outcomes but do not determine severity. Location affects functional impact and pain management, but the severity measure centers on depth and extent.

7. Which statement best describes the role of alpha-1 blockers in hypertension?

- A. They are first-line treatments for essential hypertension.
- B. They lower peripheral vascular resistance and BP but cause orthostatic hypotension and first-dose syncope; generally not first-line, used for BPH or certain indications.**
- C. They do not cause orthostatic hypotension.
- D. They cause hyperkalemia as a common adverse effect.

Alpha-1 blockers lower blood pressure by blocking alpha-1 adrenergic receptors on vascular smooth muscle, which reduces peripheral vascular resistance and systemic BP. However, they carry a high risk of orthostatic hypotension and, in particular, a first-dose syncope phenomenon, because the initial vasodilation can cause a sudden drop in BP when standing. For this reason they are not used as first-line therapy for essential hypertension; they're mainly reserved for other indications such as benign prostatic hyperplasia, where their smooth muscle-relaxing effects in the bladder and prostatic urethra provide benefit. Hyperkalemia is not a common adverse effect of alpha-1 blockers (unlike with ACE inhibitors, ARBs, or potassium-sparing diuretics). Dizziness and tachycardia can accompany the BP drop and contribute to their limited role as antihypertensives.

8. Which statement about adverse effects of finasteride is accurate?

- A. Finasteride may cause sexual side effects and fetal risks; minoxidil may cause scalp irritation and unwanted hair growth beyond treated areas**
- B. Finasteride has no sexual side effects; minoxidil has no scalp irritation
- C. Both drugs are free of adverse effects
- D. Finasteride cures baldness instantly

Understanding adverse effects of hair loss medicines helps you weigh safety alongside effectiveness. Finasteride is a 5-alpha-reductase inhibitor that lowers dihydrotestosterone (DHT). Lowering DHT can help with hair loss, but it can also cause sexual side effects such as reduced libido, erectile dysfunction, and ejaculation problems. There's also a fetal risk concern because exposure to finasteride during pregnancy can affect male fetal development, so pregnant women should avoid handling the medication if tablets are broken or crushed. Minoxidil, used topically for hair results, can irritate the scalp in some people, causing local reactions like redness or itching. If it gets absorbed systemically in larger amounts, it can stimulate hair growth in areas beyond the treated scalp, leading to unwanted or excessive hair in those regions. So the accurate statement is that finasteride may cause sexual side effects and fetal risks, while minoxidil may cause scalp irritation and unwanted hair growth beyond treated areas. The idea that there are no adverse effects, or that the cure is instant, doesn't fit what's known about these drugs.

9. Why is the diaphysis often the site of fractures?

- A. It has a poor blood supply and joint involvement
- B. It has a good blood supply and no joint involvement**
- C. It is near a growth plate
- D. It contains mainly red marrow

Fracture location is influenced by how bone is stressed and how it heals. The diaphysis, the shaft of a long bone, bears a lot of bending and twisting forces, so midshaft breaks are common. Healing is efficient there because the cortical bone of the diaphysis has a robust blood supply from periosteal vessels and the nutrient artery, which supports rapid callus formation and repair. Being away from joints, a fracture in the diaphysis usually does not involve a joint surface, reducing the risk of intra-articular damage. That combination of good vascular support and no joint involvement makes diaphyseal fractures common and tends to heal well. The other options don't fit: the diaphysis isn't characterized by poor blood supply or joint involvement, in adults it mainly contains yellow marrow rather than red, and growth plates are located near the ends of long bones (metaphysis) in children, not in the diaphysis.

10. Which statement accurately contrasts thiazide diuretics with loop diuretics in hypertension management?

- A. Thiazides inhibit the Na–Cl cotransporter in the distal convoluted tubule, producing milder diuresis with risk of hyponatremia and hypokalemia; commonly used for essential hypertension and mild edema.
- B. Thiazides inhibit NKCC in the thick ascending limb; potent diuresis; risk hypokalemia and hypomagnesemia; used for edema from heart failure.
- C. Loop diuretics inhibit Na–Cl cotransporter in distal tubule; mild diuresis.
- D. Loop diuretics block ENaC in collecting duct; mild diuresis.

Distinguishing where these diuretics act and how that affects their strength and typical use in hypertension. Thiazide diuretics block the Na-Cl cotransporter in the distal convoluted tubule, which reduces sodium reabsorption modestly and produces milder diuresis. This milder effect is advantageous for long-term blood pressure control and makes them a common first-line choice for essential hypertension and for mild edema. The diuretic action comes with electrolyte shifts, notably hyponatremia and hypokalemia, which aligns with their clinical profile. In contrast, loop diuretics inhibit the NKCC transporter in the thick ascending limb and cause much more potent diuresis with greater losses of potassium and magnesium; they're typically reserved for edema from heart failure, nephrotic syndrome, or other volume-overload states, rather than as a primary treatment for essential hypertension. So the statement that correctly contrasts them captures the distal-tubule action of thiazides, the milder diuresis, the risk of hyponatremia and hypokalemia, and their use in essential hypertension and mild edema.

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://parmacologypathophysiology.examzify.com>

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

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