ARCHER PHARMACOLOGY – DOSAGE CALCULATION AND MEDICATION ADMINISTRATION PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. **A nurse is caring for a client receiving heparin infusion. The label reads 25,000 units in 500 mL D5W. The client is receiving 1,250 units per hour. How many milliliters did the client receive in an eight-hour shift?**

   A. 200 mL

   B. 100 mL

   C. 50 mL

   D. 250 mL

2. **The PHCP prescribes 500 mg of intravenous metronidazole to be administered over thirty minutes. The bag contains 500 mg of metronidazole in 100 mL of 0.9% saline. How many mL/hour should be infused?**

   A. 100 mL/hr

   B. 150 mL/hr

   C. 200 mL/hr

   D. 250 mL/hr

3. **A vial contains 2 mg/mL; you draw 0.5 mL. How many milligrams are delivered?**

   A. 1 mg

   B. 0.5 mg

   C. 2 mg

   D. 4 mg

4. **For a six year old patient, how should you position for ear drops to be administered correctly?**

   A. Pull the ear pinna down and back

   B. Position the client on their side with the ear to be treated against a pillow

   C. Pull the ear pinna up and back

   D. Place cotton directly into the ear canal after administration

5. **A stroke patient weighing 257 pounds is prescribed alteplase at 0.9 mg/kg. What is the calculated dose in milligrams (before applying any maximum)?**

   A. 90 mg

   B. 105 mg

   C. 110 mg

   D. 120 mg

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6. A continuous IV infusion of 0.9% saline at 85 mL/hr for 12 hours delivers how many milliliters?

A. 1020 mL

B. 930 mL

C. 850 mL

D. 1100 mL

7. A medication order is for 45 units. The vial strength is 100 units per mL. How many milliliters should be drawn?

A. 0.45 mL

B. 0.5 mL

C. 0.75 mL

D. 1.0 mL

8. A primary healthcare provider orders 0.1 units/kg of regular insulin as a bolus. The patient weighs 256 lb. How many units should be given? Round to the nearest whole number.

A. 10 units

B. 11 units

C. 12 units

D. 13 units

9. If you need to prepare 50 mL of a 10 mg/mL solution, stock is 50 mg/mL. How many mL of stock are needed, and what is the final volume?

A. 10 mL stock; final volume 50 mL

B. 5 mL stock; final volume 50 mL

C. 20 mL stock; final volume 50 mL

D. 15 mL stock; final volume 60 mL

10. In weight-based medication dose calculations, which step is typically done first?

A. Determine total daily dose

B. Determine dose per administration

C. Convert units if needed

D. Round the final dose

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Answers

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

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Explanations

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1. A nurse is caring for a client receiving heparin infusion. The label reads 25,000 units in 500 mL D5W. The client is receiving 1,250 units per hour. How many milliliters did the client receive in an eight-hour shift?

A. 200 mL

B. 100 mL

C. 50 mL

D. 250 mL

In IV infusion calculations, convert the concentration to units per milliliter, then translate the required units per hour into milliliters per hour. Here, 25,000 units in 500 mL equals 50 units per mL. To deliver 1,250 units in one hour, you need 1,250 ÷ 50 = 25 mL per hour. Over eight hours, 25 mL/hour × 8 hours = 200 mL.

2. The PHCP prescribes 500 mg of intravenous metronidazole to be administered over thirty minutes. The bag contains 500 mg of metronidazole in 100 mL of 0.9% saline. How many mL/hour should be infused?

A. 100 mL/hr

B. 150 mL/hr

C. 200 mL/hr

D. 250 mL/hr

Infusion rate equals the total volume to be infused divided by the infusion time. Here the bag is 100 mL and must be given over 30 minutes (0.5 hours). So the rate is 100 mL / 0.5 h = 200 mL per hour. The concentration (500 mg in 100 mL) confirms the dose, but for the rate you only use volume and time. Therefore, the infusion should run at 200 mL/hour.

3. A vial contains 2 mg/mL; you draw 0.5 mL. How many milligrams are delivered?

A. 1 mg

B. 0.5 mg

C. 2 mg

D. 4 mg

The amount delivered is found by multiplying the concentration by the drawn volume: 2 mg/mL × 0.5 mL = 1 mg. Here, the mg per mL unit times the mL volume gives milligrams, so half a milliliter at 2 mg/mL yields 1 mg. The other options would require different volumes at the same concentration (e.g., 0.25 mL would give 0.5 mg; 1 mL would give 2 mg; 2 mL would give 4 mg).

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4. For a six year old patient, how should you position for ear drops to be administered correctly?

A. Pull the ear pinna down and back

B. Position the client on their side with the ear to be treated against a pillow

C. Pull the ear pinna up and back

D. Place cotton directly into the ear canal after administration

The key idea is to straighten the ear canal so the drops can reach the eardrum effectively. For a child around six, you pull the pinna up and back. This straightens the ear canal and helps the medication flow in smoothly without pinching or curling the canal, which would make administration harder and less effective. Pulling the pinna down and back is a technique used for younger children, whose ear canals angle differently, so it isn't appropriate here. Positioning the child on their side with the treated ear against a pillow doesn't optimize drop retention in the canal, whereas tilting the head so the ear canal is open lets the liquid stay where it's supposed to go. Placing cotton directly into the ear canal after administration isn't advised because it can push drops deeper or wick them away; if used, a small piece at the opening to catch drips—not deep insertion—is acceptable.

5. A stroke patient weighing 257 pounds is prescribed alteplase at 0.9 mg/kg. What is the calculated dose in milligrams (before applying any maximum)?

A. 90 mg

B. 105 mg

C. 110 mg

D. 120 mg

The dose is based on body weight in kilograms, using a mg per kilogram order, so you first convert pounds to kilograms and then multiply by 0.9 mg/kg. Convert weight: 257 pounds ÷ 2.2046 ≈ 116.6 kg. Dose: 116.6 kg × 0.9 mg/kg ≈ 104.94 mg, which rounds to 105 mg. In this context, the calculated dose before any maximum is about 105 mg. In practice, however, alteplase for stroke is capped at a maximum dose (90 mg). So while the computed value is 105 mg, the actual administered dose would be limited to 90 mg due to the maximum.

6. A continuous IV infusion of 0.9% saline at 85 mL/hr for 12 hours delivers how many milliliters?

A. 1020 mL

B. 930 mL

C. 850 mL

D. 1100 mL

Volume delivered equals flow rate times time. The infusion rate is 85 mL per hour, and it runs for 12 hours, so multiply: 85 × 12 = 1020. The hours cancel, leaving milliliters, so 1020 mL is delivered. The concentration of the solution doesn't change the calculation of volume here; it only describes what's in the solution, not how much of it is given. Other options would require different durations or rates.

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7. A medication order is for 45 units. The vial strength is 100 units per mL. How many milliliters should be drawn?

A. 0.45 mL

B. 0.5 mL

C. 0.75 mL

D. 1.0 mL

Calculating the required volume from a vial uses volume to draw = ordered units ÷ concentration (units per mL). With 45 units needed and a concentration of 100 units per mL, you divide 45 by 100, giving 0.45 mL. That is the exact amount to draw. If you drew 0.5 mL, you'd administer 50 units; 0.75 mL yields 75 units; 1 mL yields 100 units. So 0.45 mL is the precise volume to achieve 45 units.

8. A primary healthcare provider orders 0.1 units/kg of regular insulin as a bolus. The patient weighs 256 lb. How many units should be given? Round to the nearest whole number.

A. 10 units

B. 11 units

C. 12 units

D. 13 units

We convert weight to kilograms because the dose is given per kilogram. Using 1 kg ≈ 2.205 lb, 256 lb ≈ 256 ÷ 2.205 ≈ 116 kg. Multiply by 0.1 units/kg: 0.1 × 116 ≈ 11.6 units. Rounding to the nearest whole unit gives 12 units. So the bolus dose is about 12 units.

9. If you need to prepare 50 mL of a 10 mg/mL solution, stock is 50 mg/mL. How many mL of stock are needed, and what is the final volume?

A. 10 mL stock; final volume 50 mL

B. 5 mL stock; final volume 50 mL

C. 20 mL stock; final volume 50 mL

D. 15 mL stock; final volume 60 mL

When you dilute a solution to a desired concentration, use the relation C1V1 = C2V2, which keeps the amount of drug the same before and after dilution. Here, the stock concentration is 50 mg/mL (C1), the desired final concentration is 10 mg/mL (C2), and the final volume you want is 50 mL (V2). Solve for the volume of stock to use: V1 = (C2 × V2) / C1 = (10 mg/mL × 50 mL) / (50 mg/mL) = 10 mL. So, measure 10 mL of the stock solution and dilute it with solvent to reach a total final volume of 50 mL. This gives 10 mL × 50 mg/mL = 500 mg in 50 mL, which is 500 mg / 50 mL = 10 mg/mL.

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10. In weight-based medication dose calculations, which step is typically done first?

A. Determine total daily dose

B. Determine dose per administration

C. Convert units if needed

D. Round the final dose

The first step in weight-based dosing is to calculate the total amount of drug needed for the day. Multiply the patient's weight in kilograms by the prescribed mg/kg per day to obtain the total daily dose. This establishes the daily target amount and anchors all subsequent calculations. Once you have the total daily dose, you can determine the dose per administration by dividing by how many times the drug is given per day, and you can perform any necessary unit conversions and final rounding after that.

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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://archerpharmdosagecalcmedadmin.examzify.com

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

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