CCBMA Math and Dosage Calculations Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

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. A dose calls for 6.35 mg/kg; the patient weighs 157.3 kg. What is the correct dose?

A. 998.85 mg

B. 631.5 mg

C. 1997.7 mg

D. 49.85 mg

2. Which unit measures weight in the apothecary system?

A. Gram

B. Ounce

C. Pound

D. Grain

3. A milliliter is _____ of a liter.

A. 1/100

B. 1/1000

C. 1/10

D. 1/1000000

4. If a patient needs 7.5 mg, how many milliliters is that?

A. 0.25 mL

B. 0.5 mL

C. 1 mL

D. 2 mL

5. A 400 mg dose is needed. The preparation is 160 mg per 5 mL. How many milliliters are required?

A. 12.5 mL

B. 10 mL

C. 15 mL

D. 5 mL

6. A dose calls for 10 mg/kg; patient weighs 9.9 kg. What is the correct dose?

A. 9.9 mg

B. 99 mg

C. 990 mg

D. 19.8 mg

7. A medication is dosed at 0.5 mg/kg. The patient weighs 12 kg. What is the dose?

A. 4 mg

B. 5 mg

C. 8 mg

D. 6 mg

8. A dose calls for 75 mg/kg; the patient weighs 32.6 kg. What is the correct dose?

A. 434.75 mg

B. 3452.5 mg

C. 1726.25 mg

D. 6925 mg

9. The physician orders 5 mg of diazepam IM for anxiety. The vial on hand reads 5 mg/mL. How many milliliters should be administered?

A. 0.5 mL

B. 2 mL

C. 1 mL

D. 0.1 mL

10. Which abbreviation is used for grain?

A. gr

B. lb

C. oz

D. T or tbsp

Answers

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

Explanations

1. A dose calls for 6.35 mg/kg; the patient weighs 157.3 kg. What is the correct dose?

A. 998.85 mg

B. 631.5 mg

C. 1997.7 mg

D. 49.85 mg

The dose is found by multiplying the dose per kilogram by the patient's weight in kilograms: 6.35 mg/kg × 157.3 kg. Do the math: 157.3 × 6 = 943.8, and 157.3 × 0.35 = 55.055, so total is 998.855 mg. Rounding to two decimals gives 998.86 mg (the option closest to this is 998.85 mg). So the correct dose is about 998.85–998.86 mg.

2. Which unit measures weight in the apothecary system?

A. Gram

B. Ounce

C. Pound

D. Grain

In the apothecary system, weight is measured in grains. The grain is the base unit, with larger apothecary units built from it (for example, the ounce and pound are defined as multiples of grains: 1 ounce apothecary = 480 grains, 1 pound apothecary = 12 ounces = 5760 grains). The gram belongs to the metric system, and the ounce or pound used here align with the avoirdupois system rather than the apothecary system. Historically, medicines were commonly prescribed by grains, so this unit is the characteristic weight measure of the apothecary system. A practical note: 1 grain is about 0.0648 grams.

3. A milliliter is _____ of a liter.

A. 1/100

B. 1/1000

C. 1/10

D. 1/1000000

Milliliter is one thousandth of a liter because milli- means 10^-3. In practical terms, 1 liter equals 1000 milliliters, so 1 milliliter equals 0.001 liter. The relationship is that a milliliter is 1/1000 of a liter. For context, a centiliter is 1/100 of a liter (10 mL), a tenth of a liter is 100 mL, and 1/1,000,000 of a liter is a microliter (0.001 mL).

4. If a patient needs 7.5 mg, how many milliliters is that?

A. 0.25 mL

B. 0.5 mL

C. 1 mL

D. 2 mL

To convert a dose in milligrams to a volume in milliliters, you need the solution's concentration (how many milligrams are in each milliliter). Use Volume (mL) = Dose (mg) ÷ Concentration (mg/mL). If the medication is 15 mg per mL, then 7.5 mg ÷ 15 mg/mL = 0.5 mL. So the dose of 7.5 mg corresponds to 0.5 mL with this concentration. Always check the label for the exact concentration, because a different concentration changes the required volume (for example, 7.5 mg at 10 mg/mL would be 0.75 mL; at 5 mg/mL it would be 1.5 mL).

5. A 400 mg dose is needed. The preparation is 160 mg per 5 mL. How many milliliters are required?

A. 12.5 mL

B. 10 mL

C. 15 mL

D. 5 mL

You convert dose to volume using the concentration given. The preparation has 160 mg in 5 mL, which is 32 mg per 1 mL. To deliver 400 mg, divide the desired dose by the per-milliliter amount: 400 mg ÷ 32 mg/mL = 12.5 mL. Another way is to multiply by the volume-per-dose: 400 mg × (5 mL / 160 mg) = 12.5 mL. So you need 12.5 mL of the preparation. For context, 10 mL would give 320 mg, 15 mL would give 480 mg, and 5 mL would give 160 mg, illustrating why 12.5 mL is the correct amount for 400 mg.

6. A dose calls for 10 mg/kg; patient weighs 9.9 kg. What is the correct dose?

A. 9.9 mg

B. 99 mg

C. 990 mg

D. 19.8 mg

Dose in milligrams is found by multiplying the dose per kilogram by the patient's weight in kilograms. Here, it's 10 mg/kg and the patient weighs 9.9 kg. So, 10 mg/kg × 9.9 kg = 99 mg. The units cancel to give milligrams, so the total dose should be 99 mg. The other numbers would come from using a different per-kilogram dose or a different weight (for example, 9.9 mg would be with 1 mg/kg, 990 mg with 100 mg/kg or a weight of 99 kg, and 19.8 mg with 2 mg/kg).

7. A medication is dosed at 0.5 mg/kg. The patient weighs 12 kg. What is the dose?

A. 4 mg

B. 5 mg

C. 8 mg

D. 6 mg

The concept here is that the total dose in milligrams comes from multiplying the dose per kilogram by the patient's weight, so the units mg/kg times kg cancel to give milligrams. So you take 0.5 mg per kilogram and multiply by 12 kilograms: 0.5 × 12 = 6. That yields 6 mg. If you check the other numbers by thinking about weight, 4 mg would come from a weight of 8 kg (0.5 mg/kg × 8 kg = 4 mg), 5 mg from 10 kg, and 8 mg from 16 kg. Since the patient weighs 12 kg, the correct total dose is 6 mg.

8. A dose calls for 75 mg/kg; the patient weighs 32.6 kg. What is the correct dose?

A. 434.75 mg

B. 3452.5 mg

C. 1726.25 mg

D. 6925 mg

The main idea is to multiply the dose per kilogram by the patient's weight in kilograms to get the total dose in milligrams. Compute: 75 mg/kg × 32.6 kg = 2445 mg. So the correct dose should be 2445 mg. The options given don't include that value, which suggests a possible error in the choices or an unspecified rounding rule. If you're ever in that situation, stick with the calculated 2445 mg and flag the discrepancy for review.

9. The physician orders 5 mg of diazepam IM for anxiety. The vial on hand reads 5 mg/mL. How many milliliters should be administered?

A. 0.5 mL

B. 2 mL

C. 1 mL

D. 0.1 mL

Understanding how to turn a prescribed dose into a syringe volume relies on the relationship: dose (mg) = concentration (mg/mL) × volume (mL). You need 5 mg, and the vial provides 5 mg per 1 mL, so the volume required is 5 mg ÷ 5 mg/mL = 1 mL. Therefore, administer 1 mL. If you used 0.5 mL, you'd give 2.5 mg; 2 mL would be 10 mg; 0.1 mL would be 0.5 mg. None of those match the intended 5 mg.

10. Which abbreviation is used for grain?

A. gr

B. lb

C. oz

D. T or tbsp

Grain is a very small unit of mass from the historic apothecary system, and its abbreviation is gr. About 64.8 milligrams, it sits far smaller than a gram and much smaller than a pound or an ounce, which is why this short form is used for such tiny doses. The other options refer to larger weight units (pound and ounce) or to volume measures (tablespoon), not to weight, so they don't denote grain.

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://ccbmamathdosagecalc.examzify.com

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