

HOSA MEDICAL MATH ASSESSMENT 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. If a prescription calls for 1.5 grams of medication, how many milligrams should be administered?
 - A. 150 mg
 - B. 500 mg
 - C. 1000 mg
 - D. 1500 mg
2. What is the formula to convert Fahrenheit to Celsius?
 - A. $C = (F - 32) \times 5/9$
 - B. $C = (F + 32) \times 5/9$
 - C. $C = (F - 32) \times 9/5$
 - D. $C = (F + 32) \times 9/5$
3. How many tablets of 250 mg would be required to reach a dose of 1000 mg?
 - A. 2 tablets
 - B. 3 tablets
 - C. 4 tablets
 - D. 5 tablets
4. Calculate the dosage in mL if the order is for 250 mg of medication that comes in a concentration of 100 mg/mL.
 - A. 2.5 mL
 - B. 3.0 mL
 - C. 2.0 mL
 - D. 1.5 mL
5. What is the main focus of percent strength by volume calculations in solutions?
 - A. Concentration of solute in the solution
 - B. Total weight of the solution
 - C. Amount of drug versus amount of vapor
 - D. Total volume of gas in the solution

- 6. How would you calculate the half-life of a drug?**
- A. Half-life = $(0.693 \times \text{volume of distribution}) / \text{clearance}$
 - B. Half-life = $(\text{volume of distribution}) / (0.693 \times \text{clearance})$
 - C. Half-life = $(\text{clearance}) / (\text{volume of distribution} \times 0.693)$
 - D. Half-life = $(2 \times \text{clearance}) / (\text{volume of distribution})$
- 7. If a patient has a fluid restriction of 1 liter per day, how many mL is that?**
- A. 500 mL
 - B. 1000 mL
 - C. 1500 mL
 - D. 750 mL
- 8. How many tablespoons are in 1 ounce?**
- A. 1 tablespoon
 - B. 2 tablespoons
 - C. 3 tablespoons
 - D. 4 tablespoons
- 9. If a patient weighs 150 lbs, what is their weight in kilograms?**
- A. 60 kg
 - B. 68 kg
 - C. 70 kg
 - D. 75 kg
- 10. What is the dosage in mg of a medication given at 4 L/day at a concentration of 100 mg/100 mL?**
- A. 4000 mg
 - B. 2000 mg
 - C. 6000 mg
 - D. 8000 mg

Answers

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

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Explanations

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1. If a prescription calls for 1.5 grams of medication, how many milligrams should be administered?

- A. 150 mg
- B. 500 mg
- C. 1000 mg
- D. 1500 mg**

To determine how many milligrams correspond to 1.5 grams, it is essential to understand the relationship between these two units of measurement. There are 1000 milligrams in 1 gram. Therefore, when you want to convert grams to milligrams, you multiply the number of grams by 1000. In this case, 1.5 grams can be calculated as follows: $1.5 \text{ grams} \times 1000 \text{ mg/gram} = 1500 \text{ mg}$. Thus, when a prescription specifies 1.5 grams of medication, it translates to 1500 milligrams that need to be administered. This conversion is fundamental in the healthcare field, as using the correct measurement is crucial for patient safety and effective medication administration.

2. What is the formula to convert Fahrenheit to Celsius?

- A. $C = (F - 32) \times 5/9$**
- B. $C = (F + 32) \times 5/9$
- C. $C = (F - 32) \times 9/5$
- D. $C = (F + 32) \times 9/5$

The formula to convert Fahrenheit to Celsius is correctly identified as $C = (F - 32) \times 5/9$. This formula reflects the relationship between the two temperature scales. When converting temperature from Fahrenheit (F) to Celsius (C), the first step is to subtract 32 from the Fahrenheit temperature. This adjustment accounts for the fact that the zero points of the two scales differ significantly; for example, 32°F is the freezing point of water, while 0°C is the same point on the Celsius scale. Next, multiplying by 5/9 scales the result appropriately, aligning it with the Celsius value. The factor of 5/9 is derived from the ratio of the intervals or degrees between the two scales: there are 180 degrees between the freezing and boiling points in Fahrenheit compared to 100 degrees in Celsius. Using the other formulas would lead to incorrect conversions. For instance, adding or incorrectly using the fractions with 9 in the numerator would not yield a correct Celsius temperature, since these adjustments do not align with the actual temperature interval conversions between the two scales.

3. How many tablets of 250 mg would be required to reach a dose of 1000 mg?

- A. 2 tablets
- B. 3 tablets
- C. 4 tablets**
- D. 5 tablets

To determine how many 250 mg tablets are needed to reach a total dose of 1000 mg, you start by calculating how many times the dose of one tablet fits into the total desired dose. You divide the total dose (1000 mg) by the dose per tablet (250 mg): $1000 \text{ mg} \div 250 \text{ mg/tablet} = 4 \text{ tablets}$. This calculation indicates that you would need four tablets of 250 mg each to achieve a total of 1000 mg. This method highlights the importance of understanding dosage calculations in medical settings, where precise dosing is critical for patient safety and treatment efficacy.

4. Calculate the dosage in mL if the order is for 250 mg of medication that comes in a concentration of 100 mg/mL.

A. 2.5 mL

B. 3.0 mL

C. 2.0 mL

D. 1.5 mL

To determine the correct dosage in mL for the medication, you can use the formula that relates dosage, concentration, and volume: $\text{Volume (mL)} = \frac{\text{Desired Dose (mg)}}{\text{Concentration (mg/mL)}}$. In this case, the desired dose is 250 mg, and the concentration of the medication is 100 mg/mL. Plugging in the values gives: $\text{Volume (mL)} = \frac{250 \text{ mg}}{100 \text{ mg/mL}}$. When you perform the division: $\text{Volume (mL)} = 2.5 \text{ mL}$. Thus, the correct dosage to administer is 2.5 mL. This aligns with the concentration provided, as for every 100 mg of medication, there is 1 mL of solution. Therefore, to achieve a total of 250 mg, you indeed need 2.5 mL of the solution.

5. What is the main focus of percent strength by volume calculations in solutions?

A. Concentration of solute in the solution

B. Total weight of the solution

C. Amount of drug versus amount of vapor

D. Total volume of gas in the solution

The main focus of percent strength by volume calculations is the concentration of solute in the solution. This measurement expresses the ratio of the volume of solute to the total volume of the solution, typically as a percentage. By understanding this concept, one can determine how concentrated a solution is, which is crucial in fields such as pharmacology, chemistry, and various medical applications. Knowing the concentration helps in preparing solutions with required potency and ensures the correct dose in medical treatments, making it a fundamental aspect of solution preparation and administration. This focus on solute concentration is essential for ensuring quality and effectiveness in therapeutic contexts. The other options relate to aspects that either do not specifically address concentration (such as total weight or gas volume) or are not applicable in the context of percent strength by volume calculations. Thus, the concentration of solute remains the central point in these calculations.

6. How would you calculate the half-life of a drug?

- A. Half-life = $(0.693 \times \text{volume of distribution}) / \text{clearance}$**
- B. Half-life = $(\text{volume of distribution}) / (0.693 \times \text{clearance})$
- C. Half-life = $(\text{clearance}) / (\text{volume of distribution} \times 0.693)$
- D. Half-life = $(2 \times \text{clearance}) / (\text{volume of distribution})$

To calculate the half-life of a drug, one uses the formula that involves the volume of distribution and clearance, specifically: $\text{Half-life} = (0.693 \times \text{volume of distribution}) / \text{clearance}$. This equation is derived from pharmacokinetic principles. The volume of distribution (Vd) provides an understanding of how extensively a drug disperses throughout the body tissues compared to the plasma. Clearance (Cl) indicates the body's ability to eliminate the drug. The constant 0.693 stands for the natural logarithm of 2, which is used because half-life represents a reduction of the drug concentration to half its original value. Using this formula allows for an accurate determination of the time it will take for the concentration of the drug to decrease by half, which is crucial in clinical settings for managing dosages and understanding drug dynamics in patients. This relationship illustrates how both the distribution and elimination processes influence the duration of the drug's effects in the body. Other formulas presented do not align with the recognized pharmacokinetic calculations. They fail to reflect the accurate relationship between these parameters and do not utilize the proper mathematical derivations related to the concept of half-life.

7. If a patient has a fluid restriction of 1 liter per day, how many mL is that?

- A. 500 mL
- B. 1000 mL**
- C. 1500 mL
- D. 750 mL

When considering fluid restrictions, it's essential to understand how to convert liters to milliliters. One liter is equivalent to 1000 milliliters. Therefore, if a patient is restricted to 1 liter of fluid per day, that directly translates to 1000 mL. This measurement is crucial for ensuring that fluid intake adheres to medical guidelines, particularly in cases where fluid management is vital for patient health. Understanding this conversion reinforces the importance of precise calculations in medical settings, where even small deviations can affect treatment outcomes.

8. How many tablespoons are in 1 ounce?

- A. 1 tablespoon
- B. 2 tablespoons**
- C. 3 tablespoons
- D. 4 tablespoons

There are 2 tablespoons in 1 ounce. This relationship comes from the volume measurements in the U.S. customary system. Specifically, 1 fluid ounce is defined as being equivalent to 2 tablespoons. Understanding these conversions is essential for accurate dosing in medication, cooking, and various other settings where precise measurements are necessary. This fact is often used in recipes and medical prescriptions, emphasizing the importance of knowing how to convert between these common volume measurements for safety and efficiency.

9. If a patient weighs 150 lbs, what is their weight in kilograms?

- A. 60 kg
- B. 68 kg**
- C. 70 kg
- D. 75 kg

To convert a weight from pounds to kilograms, you can use the conversion factor where 1 pound is approximately equal to 0.453592 kilograms. The calculation involves multiplying the weight in pounds by this conversion factor. For a patient who weighs 150 pounds, the calculation would be as follows: 1. Start with the weight in pounds: 150 lbs 2. Multiply by the conversion factor: $150 \text{ lbs} \times 0.453592 \text{ kg/lb} \approx 68.18 \text{ kg}$ When rounding to the nearest whole number, this gives approximately 68 kg. Therefore, the answer of 68 kg is correct because it accurately reflects the conversion from pounds to kilograms, providing the appropriate value based on the standard conversion method.

10. What is the dosage in mg of a medication given at 4 L/day at a concentration of 100 mg/100 mL?

- A. 4000 mg**
- B. 2000 mg
- C. 6000 mg
- D. 8000 mg

To determine the dosage of the medication in milligrams, you need to first convert the flow rate of the medication from liters to milliliters since the concentration is provided in mg per mL. Given that 1 liter equals 1000 milliliters, you can convert 4 liters per day to milliliters as follows: $4 \text{ L/day} \times 1000 \text{ mL/L} = 4000 \text{ mL/day}$. Next, you know that the concentration of the medication is 100 mg per 100 mL. This can be simplified to find out how many milligrams are in 1 mL: $100 \text{ mg} / 100 \text{ mL} = 1 \text{ mg/mL}$. Now, to find the total dosage in milligrams for the 4000 mL being administered per day, you multiply the volume in milliliters by the concentration in mg per mL: $4000 \text{ mL} \times 1 \text{ mg/mL} = 4000 \text{ mg}$. Therefore, the total dosage of the medication being given at a rate of 4 L per day with a concentration of 100 mg/100 mL is indeed 4000 mg. This understanding of unit conversion and concentration calculation is essential in medical settings to ensure correct dosing.

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://hosamedicalmath.examzify.com>

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

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