

PHARMACEUTICS LL EXAM 2 PRACTICE (SAMPLE)

STUDY GUIDE



Prepare with structure. Pass with confidence



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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 smallest standard size for human-use capsules?**
 - A. No. 000
 - B. No. 5
 - C. No. 00
 - D. No. 1

- 2. What is the total hydromorphone delivered by the basal rate alone over 24 hours?**
 - A. 2.4 mg
 - B. 9.6 mg
 - C. 1.2 mg
 - D. 4.8 mg

- 3. What is the moisture content in a soft gelatin capsule?**
 - A. 4-6%
 - B. 6-10%
 - C. 10-14%
 - D. 14-18%

- 4. Which of the following is not listed as a method to control suspensions in pharmaceuticals?**
 - A. Color of the suspension
 - B. Radius of the particles
 - C. Viscosity of the medium
 - D. Stirring rate

- 5. What labeling is required for packaging suspensions?**
 - A. Shake well Before Use
 - B. Do Not Shake
 - C. Refrigerate Before Use
 - D. Shake Before Opening

- 6. An angle of repose less than 25 degrees indicates what powder flow?**
- A. Excellent
 - B. Good
 - C. Fair
 - D. Poor
- 7. Sublingual and buccal routes bypass first-pass metabolism.**
- A. False
 - B. Not sure
 - C. True
 - D. Sometimes
- 8. Which statement best distinguishes diffusion-controlled release in polymeric matrices from erosion-controlled release?**
- A. Diffusion-controlled release is governed by Fickian diffusion of drug through a porous or swollen matrix.
 - B. Erosion-controlled release results from polymer degradation (mass loss) releasing drug.
 - C. Diffusion-controlled release cannot occur in swollen matrices.
 - D. Erosion-controlled release is driven by diffusion through intact polymer.
- 9. Stokes' law is most closely associated with which phenomenon in suspensions?**
- A. Resistance to flow
 - B. Color change
 - C. Odor development
 - D. Temperature dependence
- 10. In the same powder, how many grams of caffeine are present?**
- A. 126 g
 - B. 125 g
 - C. 250 g
 - D. 12 g

Answers

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

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Explanations

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1. What is the smallest standard size for human-use capsules?

- A. No. 000
- B. No. 5**
- C. No. 00
- D. No. 1

Capsule size is defined by a standard series where the interior volume increases as the size gets larger. The smallest standard size for human-use hard gelatin capsules has the least capacity, which is why it's used for very small doses or highly potent drugs. The other options refer to larger capsules that can hold more material, so they aren't the smallest in the common human-use set. In short, the smallest option in the standard series is the one you'd choose when a tiny fill is needed.

2. What is the total hydromorphone delivered by the basal rate alone over 24 hours?

- A. 2.4 mg
- B. 9.6 mg
- C. 1.2 mg
- D. 4.8 mg**

Continuous basal infusion delivers a constant amount each hour, so the 24-hour total equals the hourly rate times 24. If the basal rate is 0.2 mg per hour, then over 24 hours it delivers $0.2 \times 24 = 4.8$ mg. So 4.8 mg is the total hydromorphone delivered by the basal rate alone. The other numbers would come from different hourly basal rates, but they're not the rate given here, and bolus doses aren't counted since the question asks for basal rate only.

3. What is the moisture content in a soft gelatin capsule?

- A. 4-6%
- B. 6-10%**
- C. 10-14%
- D. 14-18%

Moisture in soft gelatin capsules is kept as a plasticizer component to keep the shell flexible. The typical range is about 6–10% by weight. This balance allows the capsule to bend and seal properly during packaging and handling, while avoiding excessive softness that could lead to leakage or sticking. If the moisture is too low, the shell becomes brittle and can crack under stress, risking capsule failure. If the moisture is too high, the shell becomes too soft or tacky, increasing the risk of deformation, leakage, or microbial growth. The water content works with plasticizers like glycerin or sorbitol to set the capsule's properties at room temperature, helping ensure stability during storage.

4. Which of the following is not listed as a method to control suspensions in pharmaceuticals?

- A. Color of the suspension
- B. Radius of the particles
- C. Viscosity of the medium**
- D. Stirring rate

Controlling suspensions focuses on factors that change how fast particles settle and how easily the suspension can be redispersed. You actively adjust particle size (smaller radius slows settling), the viscosity of the medium (a more viscous vehicle reduces sedimentation), and the stirring rate (affects uniformity during use and redispersion). Color, while important for appearance, does not influence the physics of settling or stability, so it isn't a method used to control suspension behavior.

5. What labeling is required for packaging suspensions?

- A. Shake well Before Use**
- B. Do Not Shake
- C. Refrigerate Before Use
- D. Shake Before Opening

Suspensions require shaking to re-disperse settled particles, ensuring a uniform dose each time it's taken. The solid drug particles slowly settle out of the liquid, so without shaking the portion drawn for an administration can be more concentrated or more dilute than intended. Labeling them to "Shake well before use" tells the patient to re-suspend the dose so the entire contents have the same concentration throughout. Other options don't fit because "Do Not Shake" would leave the dose uneven; "Refrigerate Before Use" isn't a universal requirement for all suspensions and isn't about agitation; and "Shake Before Opening" isn't the standard instruction for ensuring uniform dosing once the bottle is used.

6. An angle of repose less than 25 degrees indicates what powder flow?

- A. Excellent**
- B. Good
- C. Fair
- D. Poor

The angle of repose measures how freely a powder flows by looking at the slope of a cone that forms when the powder pours and comes to rest. A low angle means the particles slide past one another easily with little cohesion, so the pile is shallow and discharge is smooth. When the angle is less than 25 degrees, this indicates excellent flow, meaning the powder handles, discharges from hoppers, and fills processes with minimal sticking or bridging. As the angle increases, flowability decreases (higher angles reflect more cohesion and friction), which is why higher ranges are described as good, fair, or poor. So an angle below 25 degrees corresponds to excellent powder flow.

7. Sublingual and buccal routes bypass first-pass metabolism.

- A. False
- B. Not sure
- C. True**
- D. Sometimes

The main idea here is how the route of administration affects exposure to hepatic first-pass metabolism. When a drug is absorbed through the sublingual or buccal mucosa, it enters the extensive network of capillaries under the tongue or inside the cheek and drains into the systemic circulation via veins that lead to the heart, bypassing the portal circulation that goes to the liver first. Because it avoids first-pass through the liver initially, most of the drug can reach systemic circulation intact, giving rapid onset and higher bioavailability for many medications such as nitroglycerin and other sublingual products. There is a small caveat: if saliva is swallowed, some drug will enter the GI tract and be subject to first-pass metabolism. Despite that, the route itself is defined by bypassing the hepatic first-pass, making it true that sublingual and buccal administration largely bypass first-pass metabolism.

8. Which statement best distinguishes diffusion-controlled release in polymeric matrices from erosion-controlled release?

- A. Diffusion-controlled release is governed by Fickian diffusion of drug through a porous or swollen matrix.
- B. Erosion-controlled release results from polymer degradation (mass loss) releasing drug.**
- C. Diffusion-controlled release cannot occur in swollen matrices.
- D. Erosion-controlled release is driven by diffusion through intact polymer.

Diffusion-controlled release involves drug molecules moving through the polymer matrix, often governed by Fickian diffusion, and can occur when the matrix is porous or swollen with water. Erosion-controlled release, on the other hand, happens when the polymer itself degrades and loses mass, physically releasing the drug as the matrix breaks down. This degradation-driven mechanism is what clearly distinguishes erosion-controlled release from diffusion-controlled release, because it shifts the release driver from molecular diffusion through the matrix to the rate of polymer degradation. The other statements misrepresent either diffusion behavior in swollen matrices or the mechanism of erosion, which is not driven by diffusion through an intact polymer.

9. Stokes' law is most closely associated with which phenomenon in suspensions?

- A. Resistance to flow**
- B. Color change
- C. Odor development
- D. Temperature dependence

Stokes' law describes the viscous drag a small sphere experiences as it moves through a fluid at low Reynolds number. The drag force, proportional to the fluid's viscosity, the particle's radius, and its velocity, represents the resistance to flow around the particle. In suspensions, this drag sets the terminal settling velocity under gravity, governing how quickly particles sediment and how stable the suspension is. So the phenomenon most closely linked to Stokes' law is the resistance to flow (viscous drag) in suspensions. Color change, odor development, and direct temperature dependence aren't what this law primarily describes, though temperature can affect viscosity and thus drag indirectly.

10. In the same powder, how many grams of caffeine are present?

A. 126 g

B. 125 g

C. 250 g

D. 12 g

The main idea is that the caffeine content by mass is fixed for a given powder. If you have the same powder, the amount of caffeine scales directly with how much powder you have. So you determine grams of caffeine by multiplying the powder mass by the caffeine concentration (as a decimal). In this scenario, applying that proportional relationship gives 126 g of caffeine in the specified amount of powder. The other numbers would come from using a different amount of powder or a different concentration, which would break the fixed proportion and don't match the given setup.

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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://ceutics2exam2.examzify.com>

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

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