

Manor Preboards Module 2 Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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 exact number of Na⁺ ions pumped out per ATP hydrolyzed?
 - A. 2
 - B. 4
 - C. 3
 - D. 1
2. Which statements are true about steroids?
 - A. I, II
 - B. I, III
 - C. I, II, III
 - D. I, II, IV
3. Isoquinoline alkaloids are derived from which amino acid?
 - A. Tyrosine
 - B. Tryptophan
 - C. Threonine
 - D. Phenylalanine
4. Which of the following is a common inorganic cofactor for enzymes?
 - A. Biotin
 - B. Magnesium
 - C. NAD⁺
 - D. FAD
5. Tetracycline acts by inhibiting which bacterial component?
 - A. 30S ribosomal subunit, blocking protein synthesis
 - B. 50S ribosomal subunit
 - C. DNA gyrase
 - D. RNA polymerase
6. A protein structure composed of more than one polypeptide chain is described as:
 - A. Primary structure
 - B. Secondary structure
 - C. Tertiary structure
 - D. Quaternary structure

- 7. Which pair of statements correctly identifies the origins of two alkaloid classes?**
- A. Tropane alkaloids from threonine; Indole alkaloids from tryptophan
 - B. Isoquinoline alkaloids from tyrosine; Indole alkaloids from tryptophan
 - C. Quinoline alkaloids from tyrosine; Tropane alkaloids from threonine
 - D. Isoquinoline alkaloids from tyrosine; Tropane alkaloids from threonine
- 8. Glandular Trichomes are associated with which plant family in this material?**
- A. Lamiaceae
 - B. Pinaceae
 - C. Piperaceae
 - D. Rosaceae
- 9. In the correct order for crude drug preparation, which step comes immediately after Collection?**
- A. Harvesting
 - B. Curing
 - C. Drying
 - D. Garbling
- 10. What term describes bone loss around teeth due to inflammatory periodontal disease?**
- A. Alveolar resorption
 - B. Osteitis
 - C. Periodontal bone loss
 - D. Periapical bone loss

Answers

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

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Explanations

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1. What is the exact number of Na⁺ ions pumped out per ATP hydrolyzed?

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

The key idea here is how the sodium-potassium pump uses energy to move ions against their gradients. For each molecule of ATP it hydrolyzes, the pump moves three sodium ions (Na⁺) out of the cell and two potassium ions (K⁺) in. This happens through a cycle: three Na⁺ bind on the inside, ATP donates a phosphate and triggers a conformational change that releases Na⁺ outside, then two K⁺ bind from outside and are released inside when the pump returns to its original state. Because three Na⁺ are moved with every ATP hydrolyzed, the exact number is three.

2. Which statements are true about steroids?

- A. I, II
- B. I, III
- C. I, II, III**
- D. I, II, IV

Steroids are lipid molecules derived from cholesterol. Because they are fat-soluble, they readily cross cell membranes and travel in the bloodstream mainly bound to carrier proteins. Inside a target cell, they bind to intracellular receptors (in the cytoplasm or nucleus). The receptor-steroid complex then acts as a transcription factor, turning on or off specific genes and altering protein production. This genomic mechanism leads to slower onset but longer-lasting effects, such as changes in metabolic enzymes or hormone receptors in tissues. So the statements that reflect these properties—being lipid-soluble and membrane-crossing, and acting through intracellular receptors to regulate gene expression—are the true ones. A statement claiming rapid, membrane-initiated signaling as the primary mode for classic steroids would not fit the typical mechanism, which is why the three statements that describe the genomic, receptor-mediated action are correct.

3. Isoquinoline alkaloids are derived from which amino acid?

- A. Tyrosine**
- B. Tryptophan
- C. Threonine
- D. Phenylalanine

Isoquinoline alkaloids come from tyrosine. In plants, tyrosine is converted into tyrosine-derived units such as tyramine and 4-hydroxyphenylacetaldehyde, which then combine through enzyme-catalyzed steps to build the benzyloisoquinoline core (norcoclaurine). From this core, a sequence of modifications—methylations, hydroxylations, and oxidations—yields the diverse isoquinoline alkaloids. This pathway is distinct from routes starting with tryptophan (which lead to indole alkaloids) or from other amino acids like threonine or phenylalanine.

4. Which of the following is a common inorganic cofactor for enzymes?

- A. Biotin
- B. Magnesium**
- C. NAD⁺
- D. FAD

Cofactors come in two broad types: inorganic metal ions and organic molecules that act as enzymes' helpers. Magnesium is a standout as a common inorganic cofactor because many enzymes rely on a metal ion to assist catalysis and substrate binding. It frequently forms a complex with ATP (Mg-ATP), which helps stabilize the negative charges on the phosphate groups and properly position them for transfer in energy- and phosphorylation-requiring reactions. That role is widespread across kinases and other ATP-using enzymes, making magnesium a go-to inorganic cofactor. Biotin is a vitamin-derived coenzyme involved in carboxylation reactions, so it's organic. NAD⁺ and FAD are also organic cofactors that shuttle electrons in redox reactions. They're not inorganic metal ions, which is why they don't fit the "inorganic cofactor" category.

5. Tetracycline acts by inhibiting which bacterial component?

- A. 30S ribosomal subunit, blocking protein synthesis**
- B. 50S ribosomal subunit
- C. DNA gyrase
- D. RNA polymerase

Tetracyclines inhibit protein synthesis by binding reversibly to the bacterial 30S ribosomal subunit. This binding blocks the attachment of aminoacyl-tRNA to the A site on the ribosome, so no new amino acids can be added to the growing polypeptide chain. Translation is halted, which stops bacterial growth. For context, the 50S subunit is the target of other antibiotics like macrolides and chloramphenicol, DNA gyrase is targeted by fluoroquinolones, and RNA polymerase is targeted by rifamycins. This helps explain why tetracyclines have their specific action and why the other targets listed correspond to different drug classes.

6. A protein structure composed of more than one polypeptide chain is described as:

- A. Primary structure
- B. Secondary structure
- C. Tertiary structure
- D. Quaternary structure**

Quaternary structure describes how multiple polypeptide chains come together to form a functional protein. When a protein consists of more than one chain, these subunits interact and align in a specific arrangement to create the overall structure and activity of the complex. For example, hemoglobin has four subunits that work together to carry oxygen efficiently. To place this in the bigger picture: the primary structure is the linear sequence of amino acids; secondary structure refers to local folding patterns like alpha helices and beta sheets; tertiary structure is the three-dimensional shape of a single polypeptide chain. When several chains are involved, their collective arrangement is what we call the quaternary structure. Since the protein in question is made of more than one polypeptide chain, it is described by its quaternary structure.

7. Which pair of statements correctly identifies the origins of two alkaloid classes?

- A. Tropane alkaloids from threonine; Indole alkaloids from tryptophan
- B. Isoquinoline alkaloids from tyrosine; Indole alkaloids from tryptophan**
- C. Quinoline alkaloids from tyrosine; Tropane alkaloids from threonine
- D. Isoquinoline alkaloids from tyrosine; Tropane alkaloids from threonine

Alkaloids often trace back to a specific amino acid that seeds their ring structure. Isoquinoline alkaloids come from tyrosine, which is converted through a series of steps to form the benzyloisoquinoline framework. Indole alkaloids come from tryptophan, providing the indole ring that is central to their core. Tropane alkaloids, on the other hand, are built from ornithine-derived units (putrescine) rather than threonine, so linking them to threonine isn't correct. Quinoline alkaloids aren't classically tied to tyrosine in this context either. Therefore, the pairing isoquinoline alkaloids from tyrosine and indole alkaloids from tryptophan reflects established biosynthetic origins.

8. Glandular Trichomes are associated with which plant family in this material?

- A. Lamiaceae**
- B. Pinaceae
- C. Piperaceae
- D. Rosaceae

Glandular trichomes are secretory hairs on a plant's surface that produce essential oils and other compounds. In the material, they're linked with the mint family because many Lamiaceae species have abundant glandular trichomes on leaves, giving a characteristic aromatic surface from the oils they secrete. This makes these trichomes a useful identifying feature for aromatic herbs like mint, basil, thyme, and sage in this family. The other families don't emphasize surface glandular trichomes as a defining trait: Pinaceae rely more on internal resin ducts in wood and needles, while Piperaceae and Rosaceae aren't characterized mainly by these secretory hairs in the same way.

9. In the correct order for crude drug preparation, which step comes immediately after Collection?

- A. Harvesting**
- B. Curing
- C. Drying
- D. Garbling

After gathering material from the field, the next operation is harvesting. Harvesting means selecting and taking the specific plant parts in the right stage of maturity and handling them carefully to preserve quality. This step ensures you obtain the correct portion of the drug and minimizes damage or contamination before any cleaning or drying. Curing, drying, and garbling are typically done after harvesting, as they are later processing steps to reduce moisture, condition the material, and remove extraneous matter. So the step immediately after collection is harvesting.

10. What term describes bone loss around teeth due to inflammatory periodontal disease?

- A. Alveolar resorption
- B. Osteitis
- C. Periodontal bone loss**
- D. Periapical bone loss

Bone loss around teeth caused by inflammatory periodontal disease is described as periodontal bone loss. When periodontitis inflames and damages the supporting tissues, the alveolar bone that anchors teeth is resorbed, leading to the characteristic bone loss seen around the roots. This term directly ties the bone destruction to the periodontal disease, making it the precise description for this situation. In contrast, bone loss at the tooth apex (periapical bone loss) comes from pulpal infection, osteitis refers to bone inflammation in a broader sense, and alveolar resorption is a more general phrase that doesn't specifically name the periodontal disease process.

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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://manorpreboardsmod2.examzify.com>

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

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