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

1. Which carbohydrate is the most abundant organic compound in the terrestrial environment?

A. Inulin

B. Cellulose

C. Dextran

D. Chitin

2. Deficiency of which vitamin leads to glossitis?

A. Vitamin B2

B. Vitamin B3

C. Vitamin B5

D. Vitamin B7

3. Clindamycin acts by inhibiting which bacterial ribosomal subunit?

A. 50S ribosomal subunit

B. 30S ribosomal subunit

C. 70S ribosome

D. 40S ribosomal subunit

4. Sinalbin and sinigrin release isothiocyanates upon enzymatic hydrolysis.

A. True

B. False

C. Not stated

D. Cannot be determined

5. Which finding is typical of chronic periodontitis?

A. Shallow pockets

B. Gingival recession

C. Mobility without bone loss

D. Deep periodontal pockets with alveolar bone loss

6. Protopectin is associated with which stage of fruit ripeness?

A. Young/unripe fruits

B. Fully ripe fruits

C. Overripe fruits

D. Processed fruits

7. Which organelle is the site of ribosome synthesis?

A. Mitochondrion

B. Lysosome

C. Nucleolus

D. Peroxisome

8. In PCR, which combination of statements is true?

A. I, II, III

B. I, II, IV

C. II, III

D. II, IV

9. Which enzyme seals the gaps between Okazaki fragments on the lagging strand?

A. Helicase

B. Primase

C. DNA polymerase

D. DNA ligase

10. Which type of DNA polymerase is essential for removing RNA primers and replacing them with nucleotides?

A. DNA polymerase I

B. DNA polymerase II

C. DNA polymerase III

D. DNA polymerase IV

Answers

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

Explanations

1. Which carbohydrate is the most abundant organic compound in the terrestrial environment?

A. Inulin

B. Cellulose

C. Dextran

D. Chitin

The greatest amount of organic material on land is built by plants, and the primary carbohydrate in plants is cellulose, the structural polysaccharide in cell walls. Cellulose is a polymer of glucose linked by beta-1,4 bonds, which leads to long, straight chains that hydrogen-bond to form strong, rigid microfibrils. This structural network is essential for plant rigidity and growth, so plants produce vast quantities of cellulose and accumulate it in wood, fibers, and other plant tissues. Because terrestrial biomass is dominated by plant material, cellulose ends up as the most abundant organic compound on land. Inulin appears as a storage carbohydrate in some plants but is not widespread enough to rival cellulose globally. Dextran is produced by certain bacteria as a microbial exopolysaccharide, not a major component of terrestrial biomass. Chitin is a major component of arthropod exoskeletons and fungal cell walls and is abundant in some environments, but overall terrestrial plant matter dwarfs it, making cellulose more abundant on land.

2. Deficiency of which vitamin leads to glossitis?

A. Vitamin B2

B. Vitamin B3

C. Vitamin B5

D. Vitamin B7

Glossitis is a mucous membrane change that signals riboflavin deficiency. Riboflavin is needed for enzymes that drive redox reactions and maintain healthy oral tissues (it's part of FAD and FMN). When riboflavin is lacking, the tongue and other oral mucosa become inflamed, often with a smooth, sore, sometimes reddened tongue and sometimes cracks at the corners of the mouth. This mucosal involvement is the classic clue pointing to riboflavin deficiency, more so than the other vitamins listed. Niacin deficiency (pellagra) can include mouth symptoms but is better known for dermatitis, diarrhea, and dementia. Pantothenic acid and biotin deficiencies are rare and don't produce glossitis as a defining feature as reliably. So, the best answer is riboflavin deficiency due to its well-established association with glossitis.

3. Clindamycin acts by inhibiting which bacterial ribosomal subunit?

A. 50S ribosomal subunit

B. 30S ribosomal subunit

C. 70S ribosome

D. 40S ribosomal subunit

Clindamycin binds to the 50S ribosomal subunit of bacteria, where it blocks the translocation step of protein synthesis, preventing elongation of the growing peptide chain. This large-subunit interaction disrupts the peptidyl transferase–related activity needed to form peptide bonds, so the ribosome can't continue producing proteins. The 30S subunit is targeted by other antibiotic classes (like tetracyclines and aminoglycosides), the 40S subunit is the eukaryotic counterpart, and the 70S ribosome refers to the whole bacterial ribosome rather than a specific subunit.

4. Sinalbin and sinigrin release isothiocyanates upon enzymatic hydrolysis.

A. True

B. False

C. Not stated

D. Cannot be determined

Glucosinolates such as sinalbin and sinigrin are cleaved by the plant enzyme myrosinase when the tissue is damaged. This enzymatic hydrolysis breaks the glucosinolate into glucose, sulfate, and an unstable aglycone that rearranges to an isothiocyanate. Specifically, sinalbin yields a p-hydroxybenzyl isothiocyanate and sinigrin yields allyl isothiocyanate. So the statement is true. Context: the isothiocyanates are responsible for the characteristic pungent flavors of cruciferous vegetables, and their formation can be influenced by conditions like pH and certain proteins that can direct the reaction toward nitriles instead of isothiocyanates, but the primary outcome of enzymatic hydrolysis is the production of isothiocyanates.

5. Which finding is typical of chronic periodontitis?

A. Shallow pockets

B. Gingival recession

C. Mobility without bone loss

D. Deep periodontal pockets with alveolar bone loss

Chronic periodontitis involves inflammation-driven destruction of the tooth-supporting tissues, leading to loss of attachment and bone. The hallmark clinical finding is deep periodontal pockets due to the apical migration of the junctional epithelium and breakdown of connective tissue, accompanied by alveolar bone loss seen radiographically. This combination—pockets that are deeper than normal plus bone loss—best reflects the disease process. Shallow pockets are not typical, gingival recession can occur but isn't by itself the defining feature, and mobility without bone loss doesn't fit the usual pattern of a periodontal destruction process.

6. Protopectin is associated with which stage of fruit ripeness?

A. Young/unripe fruits

B. Fully ripe fruits

C. Overripe fruits

D. Processed fruits

Protopectin is the insoluble, high-molecular-weight precursor of pectin found in plant cell walls. It is most abundant in fruits that are still young and firm. As the fruit ripens, enzymes break protopectin down into soluble pectins, leading to softening. So protopectin is associated with the young/unripe stage. In ripe or overripe fruits, protopectin has largely been converted or degraded, and processed fruits involve changes to pectin content from processing rather than protopectin being dominant.

7. Which organelle is the site of ribosome synthesis?

A. Mitochondrion

B. Lysosome

C. Nucleolus

D. Peroxisome

Ribosome synthesis happens in the nucleolus, a region within the nucleus where ribosomal RNA genes are transcribed and pre-rRNA is processed and assembled with ribosomal proteins. Here, rRNA is made by RNA polymerase I, and the ribosomal proteins imported from the cytoplasm join with this rRNA to form the small and large ribosomal subunits. These subunits mature in the nucleolus and are then exported to the cytoplasm to become functional ribosomes. Other organelles have different roles—mitochondria do house their own ribosomes for some mitochondrial proteins, but the assembly of whole ribosomes occurs in the nucleolus, not in mitochondria, lysosomes, or peroxisomes.

8. In PCR, which combination of statements is true?

A. I, II, III

B. I, II, IV

C. II, III

D. II, IV

PCR amplifies a specific DNA fragment by cycling through denaturation, primer annealing, and extension with a thermostable DNA polymerase. Each cycle uses a template, primers that flank the target region, dNTPs, and a suitable buffer, and the amount of product grows roughly exponentially because each new double-stranded molecule can serve as a template in subsequent cycles. The correct combination will include statements that reflect these essentials—the need for a template, primers, enzyme that works at high temperatures, and the cycle steps—and will exclude statements that conflict with these fundamentals (such as requiring RNA instead of DNA, or claiming amplification happens in a single cycle). I don't have the exact wording of the statements II and IV. Please share their text, and I'll explain why that pair is the best choice and how the others would not fit.

9. Which enzyme seals the gaps between Okazaki fragments on the lagging strand?

A. Helicase

B. Primase

C. DNA polymerase

D. DNA ligase

Okazaki fragments on the lagging strand are synthesized in pieces, leaving a nick between each fragment. DNA ligase is the enzyme that seals these gaps by forming a phosphodiester bond to join the adjacent fragments, creating a continuous DNA strand. While helicase unwinds the DNA, primase lays down RNA primers, and DNA polymerase extends from those primers, only ligase can close the backbone gaps. After primers are removed and the missing DNA is filled in, ligase glues the fragments together, finalizing the lagging-strand synthesis.

10. Which type of DNA polymerase is essential for removing RNA primers and replacing them with nucleotides?

A. DNA polymerase I

B. DNA polymerase II

C. DNA polymerase III

D. DNA polymerase IV

Removing RNA primers and replacing them with DNA hinges on a special capability: the enzyme must be able to chew away RNA primers and then fill the resulting gap with DNA. In bacteria, that job is done by DNA polymerase I because it has a 5' to 3' exonuclease activity to remove the RNA primers and a 5' to 3' polymerase activity to lay down the new DNA. After the replacement, DNA ligase seals the remaining nick, completing the process. Other polymerases don't perform this primer-removal step. DNA polymerase III is the main workhorse that synthesizes DNA, but it lacks the 5' to 3' exonuclease needed to remove RNA primers. Polymerases II and IV are more involved in repair and bypass tasks rather than primer removal during replication.

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!