

National Academy of Sports Medicine (NASM) Performance Enhancement Specialist (PES) certification Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

This is a sample study guide. To access the full version with hundreds of questions,

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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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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!

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Questions

- 1. What is the ability of the Human Movement System to have optimal Range of Motion (ROM) in order to prevent injury and enhance functional efficiency?**
 - A. Balance**
 - B. Flexibility**
 - C. Strength**
 - D. Stability**
- 2. What is an effect of a lack of neuromuscular stabilization?**
 - A. Improved balance**
 - B. Altered force-couple relationships**
 - C. Greater flexibility**
 - D. Enhanced muscle coordination**
- 3. What is the maximum amount of rest to put in between sets for an athlete performing a single-leg balance reach?**
 - A. 60 seconds**
 - B. 90 seconds**
 - C. 120 seconds**
 - D. 30 seconds**
- 4. When should light to moderate sport-specific metabolic training primarily occur?**
 - A. Off-season**
 - B. Pre-season**
 - C. In-season**
 - D. Post-season**
- 5. What muscle(s) are likely to demonstrate decreased neural control following an ankle sprain?**
 - A. Quadriceps and hamstrings**
 - B. Gluteus medius, gluteus maximus**
 - C. Calves and soleus**
 - D. Rotator cuff muscles**

- 6. What can happen when blood has a high hematocrit?**
- A. Improved oxygen delivery**
 - B. Dehydration**
 - C. Blood flow resistance**
 - D. Increased energy levels**
- 7. Which of the following ranges represents cardiac output during maximal exercise?**
- A. 10-15 L/min**
 - B. 15-20 L/min**
 - C. 20-25 L/min**
 - D. 25-30 L/min**
- 8. What assessment is appropriate to determine the lateral speed and agility of an athlete?**
- A. Vertical jump test**
 - B. Lower extremity functional test (LEFT)**
 - C. Shuttle run test**
 - D. 40-yard dash**
- 9. What occurs during the transition of an activated muscle from an eccentric contraction to a rapid concentric contraction?**
- A. Stretch-shortening cycle**
 - B. Isometric contraction**
 - C. Concentric-only movement**
 - D. Drop jump response**
- 10. Single-leg front-to-back hops might be executed by an athlete in which phase of the OPT model?**
- A. Phase 1**
 - B. Phase 2**
 - C. Phase 3**
 - D. Phase 5**

Answers

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

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Explanations

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1. What is the ability of the Human Movement System to have optimal Range of Motion (ROM) in order to prevent injury and enhance functional efficiency?

A. Balance

B. Flexibility

C. Strength

D. Stability

The ability of the Human Movement System to achieve optimal Range of Motion (ROM) is fundamentally linked to flexibility. Flexibility refers to the ability of muscles and connective tissues to elongate, allowing joints to move through their full range without restriction. This optimal ROM is crucial because maintaining adequate flexibility can prevent injuries that may occur from tight or shortened muscles, which are less capable of absorbing shock and effectively stabilizing joints during movement. When flexibility is improved, it enhances functional efficiency, allowing individuals to perform movements more smoothly and accurately. This is particularly important in dynamic activities, where a greater range of motion can lead to better performance outcomes, whether in sports or daily tasks. In contrast, while balance, strength, and stability contribute to overall movement efficiency and injury prevention, they do not specifically address the aspect of achieving an optimal range of motion. Balance involves the ability to maintain control of the body's position, strength refers to the ability to exert force against resistance, and stability is the capacity to maintain or control the body's position during movement or at rest. All these components play significant roles in overall performance but do not directly define the ROM and its relationship with injury prevention and functional efficiency.

2. What is an effect of a lack of neuromuscular stabilization?

A. Improved balance

B. Altered force-couple relationships

C. Greater flexibility

D. Enhanced muscle coordination

A lack of neuromuscular stabilization can lead to altered force-couple relationships. This refers to the way different muscles work together to produce movement and maintain stability around a joint. When neuromuscular stabilization is inadequate, the precise coordination between agonist (prime mover), antagonist (opposing muscle), and synergist (assisting muscles) may be disrupted. This can result in improper timing and recruitment of muscles, causing compensatory movements and potentially increasing the risk of injury. In practical terms, insufficient neuromuscular stabilization affects the body's ability to maintain optimal biomechanical alignment during dynamic activities, which can lead to a breakdown in movement efficiency and performance. Other options, like improved balance, greater flexibility, or enhanced muscle coordination, are typically outcomes associated with effective neuromuscular stabilization, not a lack of it.

3. What is the maximum amount of rest to put in between sets for an athlete performing a single-leg balance reach?

- A. 60 seconds
- B. 90 seconds**
- C. 120 seconds
- D. 30 seconds

When determining the appropriate rest period between sets for an athlete performing a single-leg balance reach, it's important to consider the demands of the exercise and the goals of the training session. The single-leg balance reach is a balance and stability exercise that contributes to functional movement patterns, which often emphasizes neuromuscular control and proprioception rather than maximal strength or endurance. A rest period of 90 seconds is optimal in this context as it provides sufficient recovery time for the athlete while still maintaining an elevated heart rate and neuromuscular activation. This duration helps reduce fatigue without allowing the athlete to cool down too much, which could diminish the training effect. Furthermore, 90 seconds creates an adequate window for replenishing energy stores and allows for quality performance in the subsequent set, which is essential for maintaining stability and balance. Longer rest periods could lead to unnecessary decreases in workout intensity and may shift the focus away from improving balance and coordination. Conversely, shorter rest intervals may not allow complete recovery, potentially compromising form and effectiveness. Balancing these considerations leads to the conclusion that 90 seconds offers a suitable compromise between recovery and maintaining training effectiveness for this specific exercise.

4. When should light to moderate sport-specific metabolic training primarily occur?

- A. Off-season
- B. Pre-season
- C. In-season**
- D. Post-season

Light to moderate sport-specific metabolic training primarily occurs during the in-season phase of an athlete's training schedule. This is because during the in-season period, the athlete is typically competing more frequently and needs to maintain their performance levels while also managing fatigue and recovery. In-season training focuses on maintaining the athletic qualities developed during the off-season and pre-season, as well as ensuring that athletes can perform optimally in their competitions. Light to moderate intensity metabolic training helps athletes to enhance their aerobic capacity, improve recovery time, and maintain overall conditioning without overtaxing their bodies, which is crucial during this competitive phase. While off-season and pre-season periods are essential for building strength, endurance, and specific skills, the in-season phase is about sustaining those gains while balancing the demands of competition. Post-season is usually a time for recovery and may not focus on metabolic conditioning in the same way, as the emphasis will shift towards rest and injury recovery.

5. What muscle(s) are likely to demonstrate decreased neural control following an ankle sprain?

- A. Quadriceps and hamstrings**
- B. Gluteus medius, gluteus maximus**
- C. Calves and soleus**
- D. Rotator cuff muscles**

Following an ankle sprain, the muscles that are likely to demonstrate decreased neural control are primarily located around the hips, specifically the gluteus medius and gluteus maximus. This decreased neural control can occur due to various factors related to the injury, including proprioceptive deficits and neurological changes that affect muscle activation patterns. In the case of an ankle sprain, the body often compensates for the injured area, which can lead to altered movement patterns and decreased strength in the stabilizing hip muscles. The gluteus medius plays a crucial role in stabilizing the pelvis, especially during activities that involve one-leg stance, such as walking or running. If this muscle does not activate properly due to a sprain, it can affect overall lower body biomechanics, leading to further issues not just at the ankle but also at the knee and hip. While other muscles, such as the quadriceps, hamstrings, and calf muscles, may also experience some degree of altered neural control or recruitment patterns following an ankle injury, the specific focus on the gluteal muscles highlights their importance in maintaining stability and coordinated movement in the kinetic chain. The rotator cuff muscles are not relevant in the context of an ankle sprain, as they are involved with

6. What can happen when blood has a high hematocrit?

- A. Improved oxygen delivery**
- B. Dehydration**
- C. Blood flow resistance**
- D. Increased energy levels**

When blood has a high hematocrit, it means that the proportion of red blood cells in the blood is elevated. This condition can lead to increased viscosity of the blood, which can create greater resistance to blood flow. As a result, the heart has to work harder to pump the thicker blood through the circulatory system. This can potentially lead to complications, such as increased blood pressure and a higher risk of thrombosis (blood clots), because the elevated viscosity can slow down circulation and interfere with normal blood flow dynamics. While conditions such as dehydration can increase hematocrit levels because of reduced plasma volume, that aspect doesn't directly relate to the primary effect of a high hematocrit. Although improved oxygen delivery and increased energy levels might be seen as potential benefits of having more red blood cells, they can be overshadowed by the detrimental effects of increased blood viscosity and resistance. Thus, understanding that high hematocrit primarily increases blood flow resistance is crucial for recognizing the physiological implications it has on cardiovascular health and athletic performance.

7. Which of the following ranges represents cardiac output during maximal exercise?

- A. 10-15 L/min**
- B. 15-20 L/min**
- C. 20-25 L/min**
- D. 25-30 L/min**

During maximal exercise, cardiac output—the amount of blood the heart pumps per minute—typically ranges from 20 to 25 liters per minute for highly trained athletes. This increase occurs because the body demands more oxygen and nutrients during high-intensity activities, requiring the heart to work harder to deliver blood effectively to the muscles. In sedentary individuals, cardiac output during maximal exercise may be lower, around 15-20 L/min. However, elite athletes can achieve higher levels, making the range of 20-25 L/min accurate for peak performance scenarios. This understanding helps in assessing cardiovascular fitness and tailoring training programs to optimize performance.

8. What assessment is appropriate to determine the lateral speed and agility of an athlete?

- A. Vertical jump test**
- B. Lower extremity functional test (LEFT)**
- C. Shuttle run test**
- D. 40-yard dash**

The correct assessment to determine the lateral speed and agility of an athlete is the shuttle run test. This test specifically evaluates an athlete's ability to change direction quickly while maintaining speed, which is a crucial component of agility. During the shuttle run, the athlete sprints in a zigzag pattern over a set distance, which mimics the lateral movements often required in sports. Lateral speed and agility are fundamental for athletes in many sports, as they often need to move side-to-side quickly to evade opponents or reposition themselves. The shuttle run test effectively measures these capabilities due to its focus on both speed and directional changes. Other assessments, such as the vertical jump test, primarily evaluate explosive lower body power rather than agility. The lower extremity functional test (LEFT) assesses overall lower body movement quality but does not focus solely on speed or lateral agility. The 40-yard dash is a standard measure of straight-line speed and does not involve lateral movement, making it less suitable for assessing agility.

9. What occurs during the transition of an activated muscle from an eccentric contraction to a rapid concentric contraction?

- A. Stretch-shortening cycle**
- B. Isometric contraction**
- C. Concentric-only movement**
- D. Drop jump response**

The transition from an eccentric contraction to a rapid concentric contraction is best characterized by the stretch-shortening cycle. This physiological mechanism involves an initial lengthening (eccentric phase) of the muscle, followed by an immediate shortening (concentric phase) that occurs rapidly. During the eccentric phase, the muscle is stretched and stores elastic energy, which is then utilized during the subsequent concentric contraction. This stored elastic energy enhances performance, allowing for a more powerful contraction than could be achieved through a concentric contraction alone. The stretch-shortening cycle is a key aspect of athletic performance, contributing to explosive movements such as jumping and sprinting. The other options, while relevant in different contexts, do not accurately describe this specific transition. An isometric contraction refers to muscle activation without movement, which does not occur when transitioning directly from eccentric to concentric. A concentric-only movement would imply that there is no eccentric phase involved, which contradicts the nature of the transition being described. The drop jump response is a specific performance test that may utilize the stretch-shortening cycle but does not encapsulate the entire concept of the transition between eccentric and concentric contractions.

10. Single-leg front-to-back hops might be executed by an athlete in which phase of the OPT model?

- A. Phase 1**
- B. Phase 2**
- C. Phase 3**
- D. Phase 5**

Single-leg front-to-back hops are a dynamic exercise that primarily focuses on developing power, balance, and coordination, which are typically emphasized during the highest level of the OPT (Optimum Performance Training) model. Execution of this exercise aligns with Phase 5, often referred to as the power phase. In Phase 5, athletes are trained to enhance their explosive strength and power, which is essential for performance in many sports. This phase incorporates high-intensity and high-velocity movements, helping athletes improve their ability to produce force quickly. Single-leg movements, such as hops, are particularly effective in this phase as they also engage stabilizing muscles, enhancing overall balance and agility, which is critical for competitive performance. The other phases focus on different objectives: Phase 1 emphasizes stabilization and endurance, Phase 2 centers on strength endurance, and Phase 3 targets hypertrophy. Each of these earlier phases includes lower-intensity exercises with less emphasis on explosive movements compared to Phase 5, where the goal is to maximize athletic performance through powerful and reactive training techniques. Therefore, single-leg front-to-back hops appropriately fit within the power-focused objectives of Phase 5 in the OPT model.

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://nasm-performanceenhancementspecialist.examzify.com>

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