

# National Academy of Sports Medicine (NASM) Performance Enhancement Specialist (PES) certification Practice Exam (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. Which stage of cardio training should mark the gradual inclusion of repeated sprint training?**
  - A. Stage 1**
  - B. Stage 2**
  - C. Stage 3**
  - D. Stage 4**
  
- 2. 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**
  
- 3. What is a common benefit of resistance training?**
  - A. Decreased muscle mass**
  - B. Improved cardiovascular endurance**
  - C. Enhanced joint stability**
  - D. Reduced bone density**
  
- 4. The heart pumps blood into the aorta from which of the following structures?**
  - A. Right atrium**
  - B. Left ventricle**
  - C. Right ventricle**
  - D. Left atrium**
  
- 5. During which phase of training is emphasis placed on increasing maximum strength?**
  - A. Phase 1: Stabilization Endurance**
  - B. Phase 2: Strength Endurance**
  - C. Phase 3: Hypertrophy**
  - D. Phase 4: Maximal Strength**

- 6. Which muscle functions as a stabilizer while an athlete performs a bench press?**
- A. Pectoralis major**
  - B. Triceps brachii**
  - C. Rotator cuff**
  - D. Deltoid**
- 7. Which of the following is an example of a core-strength exercise?**
- A. Back extension**
  - B. Bench press**
  - C. Leg press**
  - D. Deadlift**
- 8. Following a cycle of training in OPT Phase 5, what is the next progression to produce the highest levels of acceleration and rate of force production?**
- A. Strength training**
  - B. Muscular endurance training**
  - C. Maximum power training**
  - D. Balance training**
- 9. What phenomenon occurs when synergistic muscles compensate for a weak prime mover?**
- A. Synergistic dominance**
  - B. Muscle inhibition**
  - C. Neural adaptation**
  - D. Motor unit recruitment**
- 10. 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**

## Answers

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

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## **Explanations**

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**1. Which stage of cardio training should mark the gradual inclusion of repeated sprint training?**

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

The correct stage for the gradual inclusion of repeated sprint training is Stage 3, which is characterized by the development of anaerobic power and endurance as well as the improvement of performance in high-intensity efforts. This stage involves the addition of higher-intensity intervals and sport-specific training, which naturally includes repeated sprint training. In Stage 3, the focus shifts from primarily improving aerobic capacity to enhancing an athlete's ability to sustain and recover from repeated bouts of high-intensity work. Repeated sprint training specifically helps athletes develop muscular endurance and power over short distances, crucial for sports that require quick bursts of speed. Earlier stages, such as Stage 1 and Stage 2, focus more on building a solid aerobic base and increasing overall endurance through steady-state cardio, which is not suitable for high-intensity sprinting activities. Stage 4 would involve advanced training tactics and adaptations after sufficient groundwork has been laid in earlier stages, but it is not the stage where the gradual inclusion of repeated sprint training should first occur.

**2. 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.

### 3. What is a common benefit of resistance training?

- A. Decreased muscle mass
- B. Improved cardiovascular endurance
- C. Enhanced joint stability**
- D. Reduced bone density

Enhanced joint stability is a common benefit of resistance training because it helps strengthen the muscles, tendons, and ligaments surrounding the joints. By engaging in various resistance exercises, individuals can improve their muscle tone and increase proprioception, which is the body's ability to sense movement, action, and location. This, in turn, contributes to better joint support and stability, which is especially crucial in preventing injuries and improving overall functional movement. Resistance training also encourages the development of muscle synergies, where different muscle groups work together more effectively during movement, further enhancing joint stability. Stronger muscles provide better support for the joints they surround, leading to improved performance in both athletic and daily activities. The other options do not reflect the typical benefits associated with resistance training. For instance, decreased muscle mass would contradict the primary goal of resistance training, which is to increase muscle strength and size. Improved cardiovascular endurance is more directly associated with aerobic exercises rather than resistance training alone. Lastly, reduced bone density is not a characteristic of resistance training, as this form of exercise is known to promote increased bone density through the stress it places on the skeletal system.

### 4. The heart pumps blood into the aorta from which of the following structures?

- A. Right atrium
- B. Left ventricle**
- C. Right ventricle
- D. Left atrium

The heart pumps blood into the aorta specifically from the left ventricle. The left ventricle is responsible for generating the force needed to push oxygenated blood throughout the body. This chamber receives blood from the left atrium, which collects oxygen-rich blood from the lungs via the pulmonary veins. Once filled, the left ventricle contracts and ejects the blood into the aorta, the largest artery in the body, where it will be distributed to various tissues and organs. Understanding this process is crucial for those studying cardiovascular physiology, as it emphasizes the systemic circulation's role and highlights the left ventricle's importance in maintaining adequate blood flow. In contrast, the other structures mentioned (right atrium, right ventricle, and left atrium) all serve different functions in the circulatory system. The right atrium receives deoxygenated blood from the body, the right ventricle pumps this blood to the lungs for oxygenation, and the left atrium serves to channel oxygenated blood into the left ventricle. Each plays a pivotal role but does not directly facilitate the pumping of blood into the aorta.

**5. During which phase of training is emphasis placed on increasing maximum strength?**

- A. Phase 1: Stabilization Endurance**
- B. Phase 2: Strength Endurance**
- C. Phase 3: Hypertrophy**
- D. Phase 4: Maximal Strength**

The emphasis on increasing maximum strength is specifically found in the fourth phase of training, known as Maximal Strength. During this phase, the primary focus is on developing the neuromuscular system's ability to produce force. This is achieved through lower repetitions and higher weights, which are key components of strength training. In this phase, exercises are designed to maximize strength output and enhance the athlete's ability to lift heavier loads, which is crucial for athletes looking to improve performance in their respective sports. Additionally, training in this phase typically includes multi-joint, compound movements that engage multiple muscles and joints, further promoting strength gains. The other phases are focused on different training adaptations. For instance, the Stabilization Endurance phase is centered on improving stabilization and endurance, while the Strength Endurance phase focuses on enhancing muscular endurance alongside strength. The Hypertrophy phase primarily targets muscle growth through moderate rep ranges and increased volume rather than maximizing strength. Thus, the Maximal Strength phase is distinct in its goal of increasing an individual's maximum strength capacity.

**6. Which muscle functions as a stabilizer while an athlete performs a bench press?**

- A. Pectoralis major**
- B. Triceps brachii**
- C. Rotator cuff**
- D. Deltoid**

The rotator cuff plays a crucial role in shoulder stability during movements like the bench press. This group of muscles, which includes the supraspinatus, infraspinatus, teres minor, and subscapularis, is responsible for maintaining the position and function of the shoulder joint. When an athlete performs a bench press, the rotator cuff muscles work to stabilize the glenohumeral joint (the shoulder joint), ensuring that the humerus remains properly seated in the glenoid cavity while the pressing motion occurs. The stabilization provided by the rotator cuff is essential for optimal performance and injury prevention, as it allows the surrounding larger muscle groups (such as the pectoralis major and deltoids) to generate force efficiently while minimizing undue stress on the shoulder joint. Proper functioning of the rotator cuff ensures that these larger muscles can work effectively without compromising shoulder integrity or movement quality.

**7. Which of the following is an example of a core-strength exercise?**

- A. Back extension**
- B. Bench press**
- C. Leg press**
- D. Deadlift**

The selection of back extension as the example of a core-strength exercise focuses on its primary function in strengthening the muscles of the lower back, which are essential components of the core. The core is defined as the region around the torso and includes not just abdominal muscles but also the muscles of the lower back, pelvic floor, and even the diaphragm. Back extensions specifically target the erector spinae, which play a crucial role in stabilizing the lumbar spine during various movements, thus enhancing overall core stability and strength. A strong core is vital for maintaining proper posture, balance, and alignment during physical activities, making exercises like the back extension foundational for building core strength. In contrast, bench press, leg press, and deadlift primarily target upper body pushing, lower body pushing, and combined lower body and back muscles, respectively. While these exercises do engage core muscles to some extent for stabilization, they are not primarily focused on core strength as back extensions are. This distinction is essential in understanding the functional roles of different exercises in a training program.

**8. Following a cycle of training in OPT Phase 5, what is the next progression to produce the highest levels of acceleration and rate of force production?**

- A. Strength training**
- B. Muscular endurance training**
- C. Maximum power training**
- D. Balance training**

The correct progression after completing a cycle of training in OPT Phase 5, which focuses on power training, is to engage in maximum power training. This phase is specifically designed to enhance the body's ability to generate force quickly, which is crucial for improving acceleration and overall athletic performance. Maximum power training involves explosive movements and high-intensity exercises that target both strength and speed. By focusing on these explosive efforts, the body adapts to produce greater levels of force in shorter time frames, effectively increasing both acceleration and rate of force production. This is essential for athletes looking to optimize their performance in competitive settings, where quick bursts of energy are often needed. Other choices do not align with the goal of maximizing acceleration and force production. Strength training, while important, generally emphasizes heavier loads and slower movements, which may not effectively develop the explosiveness associated with maximum power. Muscular endurance training focuses on sustaining exercise over longer periods, which does not specifically enhance the ability to produce force rapidly. Balance training, while beneficial for stability and coordination, does not directly contribute to the development of acceleration or explosive power. Therefore, maximum power training is the logical next step following Phase 5 to achieve the highest levels of acceleration and rate of force production.

**9. What phenomenon occurs when synergistic muscles compensate for a weak prime mover?**

- A. Synergistic dominance**
- B. Muscle inhibition**
- C. Neural adaptation**
- D. Motor unit recruitment**

The phenomenon where synergistic muscles compensate for a weak prime mover is known as synergistic dominance. This occurs when the primary mover, which is typically responsible for a specific movement, does not generate enough strength or force. As a result, the synergistic muscles—those that assist the prime mover—take on a larger role in executing that movement. This compensation can sometimes lead to imbalances or inefficient movement patterns, as the primary mover isn't fully engaged, potentially causing overuse or strain on the synergistic muscles. Understanding this concept is crucial, particularly in performance enhancement and rehabilitation settings, as it highlights the importance of ensuring that all muscles involved in a movement are functioning optimally. By addressing the overall strength and coordination of the prime mover, trainers can help prevent injuries and improve overall performance.

**10. 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.

## 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](mailto: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!**

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