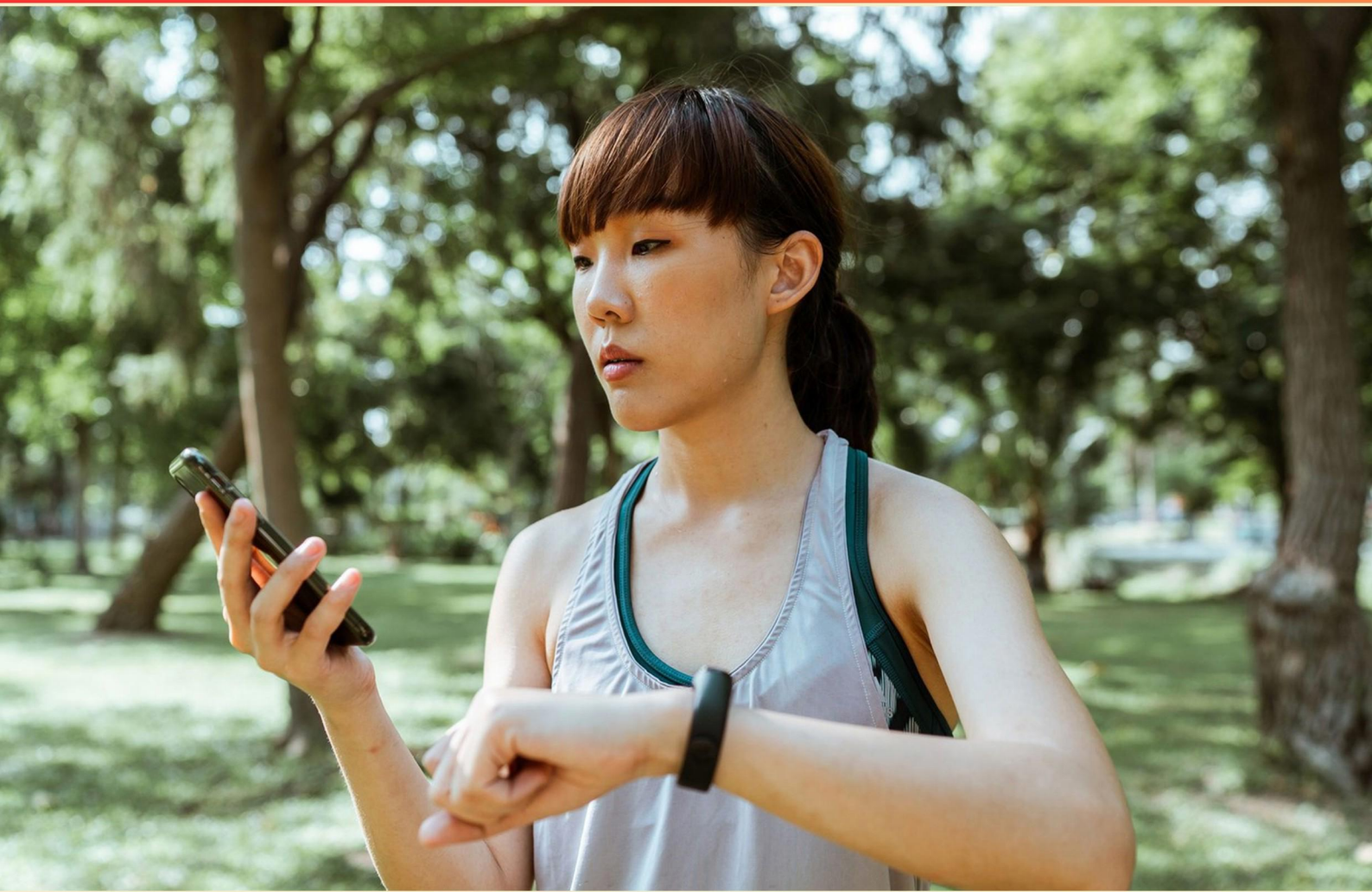


NCSF ACPT SECTION II: EXERCISE PHYSIOLOGY PRACTICE EXAM (SAMPLE) STUDY GUIDE



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. Which factor is most critical for determining exercise intensity in aerobic activities?**
 - A. Heart rate variability
 - B. Oxygen consumption (VO_2)
 - C. Lactate threshold
 - D. Muscle fatigue
- 2. What type of contraction is performed by the abdominals and erector spinae muscle group during the performance of a push-up?**
 - A. Isokinetic
 - B. Isometric
 - C. Concentric
 - D. Eccentric
- 3. Which energy system predominates during sustained, lower-intensity exercise?**
 - A. Anaerobic energy system
 - B. Aerobic energy system
 - C. Phosphagen system
 - D. Glycolytic system
- 4. The sliding filament theory of muscular contraction states ____.**
 - A. Thin actin filaments move over thick myosin filaments to produce force
 - B. Motor units cross each other as they are recruited
 - C. Filaments in ATP are separated by ATPase
 - D. Force is produced by tendons which pull on the connected bone
- 5. What rest interval between sets of 5RM deadlifts would ensure restoration of the phosphagen system and proper performance in the next effort?**
 - A. 30 seconds
 - B. 60 seconds
 - C. 90 seconds
 - D. 120 seconds

- 6. What is commonly measured during a lactate threshold test?**
- A. Heart rate variability.
 - B. Maximum oxygen uptake (VO₂ max).
 - C. Blood lactate concentration at various exercise intensities.
 - D. Respiratory exchange ratio.
- 7. Which group of athletes would benefit most from a raised lactate threshold?**
- A. Long-distance runners and cyclists.
 - B. Power lifters.
 - C. Yoga practitioners.
 - D. Recreational swimmers.
- 8. What is the primary fuel source during high-intensity, anaerobic activities?**
- A. Fats
 - B. Amino acids
 - C. Carbohydrates
 - D. Proteins
- 9. What impact does weight-bearing exercise have on older adults?**
- A. It increases the risk of fractures
 - B. It promotes muscle atrophy
 - C. It helps to maintain bone density
 - D. It has no impact on bone health
- 10. Why is it essential for athletes to train above their current lactate threshold?**
- A. To reduce overall muscle mass.
 - B. To enhance their speed and power output.
 - C. To increase their tolerance to lactate accumulation.
 - D. To decrease potential for injury in future workouts.

Answers

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

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Explanations

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1. Which factor is most critical for determining exercise intensity in aerobic activities?

- A. Heart rate variability
- B. Oxygen consumption (VO₂)**
- C. Lactate threshold
- D. Muscle fatigue

Oxygen consumption (VO₂) is the most critical factor for determining exercise intensity in aerobic activities because it directly reflects the amount of oxygen the body is utilizing during physical exertion. VO₂ provides insight into the cardiovascular and respiratory systems' efficiency in delivering oxygen to the working muscles and the muscles' ability to utilize that oxygen for energy production. As exercise intensity increases, the body's demand for oxygen also rises, and the rate of VO₂ will increase accordingly. This relationship is crucial in aerobic training and programming, as it helps quantify the effort level during exercise and can be used to assess an individual's fitness level and set personalized training targets. The other factors, such as heart rate variability, lactate threshold, and muscle fatigue, while relevant in the context of exercise physiology, do not capture aerobic exercise intensity as effectively as VO₂. Heart rate variability is more indicative of autonomic nervous system functioning and recovery than exercise intensity itself. Lactate threshold represents the point at which lactate begins to accumulate in the bloodstream and is more related to anaerobic performance and endurance. Muscle fatigue pertains to the temporary inability to maintain the desired level of physical activity, which can occur at varying intensities but does not serve as a direct measure for establishing exercise intensity in aerobic

2. What type of contraction is performed by the abdominals and erector spinae muscle group during the performance of a push-up?

- A. Isokinetic
- B. Isometric**
- C. Concentric
- D. Eccentric

In the context of a push-up, the abdominal and erector spinae muscles perform an isometric contraction to maintain stability and spinal alignment throughout the movement. Isometric contractions involve a muscle generating force without changing its length, which is crucial during a push-up as these muscles engage to hold the pelvis and spine in a neutral position while the upper body moves up and down. During the execution of a push-up, the core muscles, including the abdominals and erector spinae, resist the forces acting on the body to prevent sagging or bending of the spine. This stabilization is essential for proper form and effectiveness of the exercise, allowing for a safe and effective training of both the upper body and core. Other types of contractions, such as concentric and eccentric, are involved in the movement of the arms and shoulders during a push-up but do not apply to the role of the abdominal and erector spinae muscles maintaining the body's posture.

3. Which energy system predominates during sustained, lower-intensity exercise?

- A. Anaerobic energy system
- B. Aerobic energy system**
- C. Phosphagen system
- D. Glycolytic system

The aerobic energy system predominates during sustained, lower-intensity exercise because it relies on oxygen to convert carbohydrates and fats into energy. This system is capable of producing a larger amount of ATP (adenosine triphosphate), which is the energy currency of the body, over an extended period of time. During lower-intensity exercise, such as jogging or swimming at a steady pace, the body can efficiently utilize the aerobic pathways for energy production, enabling prolonged activity without quickly depleting energy stores. In contrast, the anaerobic energy system, including the phosphagen and glycolytic systems, tends to be more predominant during high-intensity, short-duration efforts. These systems operate without the need for oxygen and can provide instant energy but are limited in their capacity to sustain prolonged exercise. Consequently, as exercise intensity decreases, the body shifts towards the aerobic system, optimizing energy production for longer-lasting activities.

4. The sliding filament theory of muscular contraction states ____.

- A. Thin actin filaments move over thick myosin filaments to produce force**
- B. Motor units cross each other as they are recruited
- C. Filaments in ATP are separated by ATPase
- D. Force is produced by tendons which pull on the connected bone

The sliding filament theory of muscular contraction describes the process by which muscles contract at the microscopic level. According to this theory, the key action that produces muscle contraction involves the thin actin filaments sliding over the thick myosin filaments. This interaction is facilitated by the formation of cross-bridges between the myosin heads and the binding sites on the actin filaments. When a muscle is stimulated to contract, the myosin heads extend and attach to the actin filaments, pulling them inward as they pivot and release. This sliding mechanism shortens the distance between the Z-lines of the muscle fiber, ultimately leading to muscle contraction. This process is crucial for generating force and movement in skeletal muscles. Therefore, the statement that thin actin filaments move over thick myosin filaments captures the fundamental mechanism of how muscles produce contraction and generate force. The other options do not accurately describe the sliding filament theory or its role in muscular contraction.

5. What rest interval between sets of 5RM deadlifts would ensure restoration of the phosphagen system and proper performance in the next effort?

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

To ensure the effective restoration of the phosphagen system during strength training, particularly with heavy lifts like a 5RM (repetition maximum) deadlift, a longer rest interval is necessary. The phosphagen system primarily relies on ATP and creatine phosphate (CP) for energy during short, high-intensity activities. While this energy system can provide rapid bursts of power, it also depletes quickly—often within about 10 seconds of intense effort. After heavy lifts, the restoration of ATP and creatine phosphate can take significant time, with research indicating that it can take up to 3 to 5 minutes for full recovery, although complete restoration may vary depending on individual fitness levels, muscle fiber types, and duration of the exercise bout. Choosing a rest interval of 120 seconds allows enough time for partial to significant recovery of the phosphagen system. This means that by the next set, the athlete will have restored enough energy reserves to perform effectively and maintain optimal performance throughout the workout. Shorter rest periods, such as 30 or 60 seconds, might not provide adequate recovery, potentially impairing performance in subsequent sets. Thus, selecting a 120-second rest interval is most conducive to ensuring the necessary recovery of the phosphagen system

6. What is commonly measured during a lactate threshold test?

- A. Heart rate variability.
- B. Maximum oxygen uptake (VO₂ max).
- C. Blood lactate concentration at various exercise intensities.**
- D. Respiratory exchange ratio.

During a lactate threshold test, the primary focus is on assessing blood lactate concentration at various exercise intensities. This test helps to identify the intensity of exercise at which lactate begins to accumulate in the blood, indicating a shift from predominantly aerobic metabolism to anaerobic metabolism. By measuring blood lactate levels at different workload intensities—typically during incremental exercise—fitness professionals can determine the lactate threshold, which is a crucial marker for endurance performance. The lactate threshold provides valuable information for training, allowing athletes to tailor their exercise intensities for optimal performance and endurance adaptation. Understanding where this threshold lies helps in developing training regimens that enhance aerobic capacity and delay the onset of fatigue during prolonged physical activity.

7. Which group of athletes would benefit most from a raised lactate threshold?

- A. Long-distance runners and cyclists.**
- B. Power lifters.
- C. Yoga practitioners.
- D. Recreational swimmers.

A raised lactate threshold is particularly beneficial for long-distance runners and cyclists due to the nature of their events, which involve sustained aerobic activity over extended periods. Lactate threshold refers to the exercise intensity at which lactate begins to accumulate in the bloodstream, indicating a shift from predominantly aerobic energy production to anaerobic metabolism. Long-distance athletes benefit by being able to maintain a higher intensity for a longer duration before lactate accumulation impairs performance. For example, if a runner can increase their lactate threshold, they can run faster without fatigue setting in too quickly, which is crucial for optimizing performance in events like marathons or long cycling races. This increase allows them to sustain effort and delay the onset of fatigue, thereby maximizing their ability to perform well over extended durations. While power lifters, yoga practitioners, and recreational swimmers also require a degree of aerobic fitness, their specific focuses don't hinge as critically on the lactate threshold as those of long-distance athletes. Power lifters prioritize maximal strength and power rather than endurance, while yoga practitioners emphasize flexibility and mindfulness over aerobic capacity. Recreational swimmers may benefit from aerobic conditioning, but it is not as pivotal to their performance as it is for endurance-focused athletes. Thus, long-distance runners and cyclists gain the most

8. What is the primary fuel source during high-intensity, anaerobic activities?

- A. Fats
- B. Amino acids
- C. Carbohydrates**
- D. Proteins

During high-intensity, anaerobic activities, the primary fuel source is carbohydrates. This is because carbohydrate metabolism can rapidly provide the energy required for explosive movements, which usually occur in activities like sprinting, weightlifting, or high-intensity interval training. In the absence of oxygen, the body relies on a process called glycolysis, which breaks down glucose to produce ATP—the energy currency needed for muscle contractions. Glycolysis is much quicker than the process of oxidizing fats or proteins, making carbohydrates the preferred source when quick bursts of energy are necessary. While fats and proteins can be utilized as energy sources during prolonged or lower-intensity activities, they do not provide the same rapid energy output as carbohydrates. Additionally, amino acids, although they can be converted to glucose through gluconeogenesis, are generally not a primary energy source during high-intensity efforts.

9. What impact does weight-bearing exercise have on older adults?

- A. It increases the risk of fractures
- B. It promotes muscle atrophy
- C. It helps to maintain bone density**
- D. It has no impact on bone health

Weight-bearing exercise plays a crucial role in the health of older adults, particularly concerning bone density. When older adults engage in activities that require them to work against gravity, such as walking, jogging, or resistance training, the mechanical stress applied to the bones stimulates bone remodeling processes. This stimulation encourages the formation of new bone tissue while decreasing bone resorption, helping to maintain and even improve bone density. For older adults who are at a heightened risk of osteoporosis and fractures, such exercise can be especially beneficial. It not only aids in maintaining bone mass but can also improve balance and coordination, reducing the risk of falls, which is another important factor in fracture prevention. Therefore, the statement that weight-bearing exercise helps to maintain bone density is accurate and reflects the positive impact of such activities on the skeletal health of older adults.

10. Why is it essential for athletes to train above their current lactate threshold?

- A. To reduce overall muscle mass.
- B. To enhance their speed and power output.
- C. To increase their tolerance to lactate accumulation.**
- D. To decrease potential for injury in future workouts.

Training above the current lactate threshold is vital for athletes because it helps to increase their tolerance to lactate accumulation. When athletes train at intensities exceeding their lactate threshold, their bodies are exposed to higher levels of lactate, which can lead to adaptations that improve their ability to clear lactate from the bloodstream. This process allows for a greater capacity to perform sustained high-intensity efforts without experiencing excessive fatigue. Increased tolerance to lactate means that athletes can maintain their performance levels for longer periods, as their bodies become more efficient at processing and utilizing lactate as an energy source. This adaptation is crucial for improving endurance and delaying the onset of fatigue during intense activities, contributing to enhanced overall athletic performance. The other options do not adequately address the specific physiological adaptations resulting from training above lactate threshold. Reducing overall muscle mass is generally counterproductive for performance; enhancing speed and power output is more associated with improving anaerobic capacity, which can result from various training modalities, but does not directly relate to the lactate threshold specifically; and decreasing potential for injury is important, but it is more linked to appropriate training techniques rather than specifically the concept of lactate threshold.

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://ncsfacptsec2exercisephysiology.examzify.com>

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

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