NSCA Sprinting and Running 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. **In flight non-support phase, the thigh begins to move down, sweeping the lower leg backward and down with which action?**

   A. Pawing

   B. Pushing

   C. Slapping

   D. Loping

2. **During Maximum Velocity, leg drive is facilitated by which action?**

   A. Explosive arm action

   B. Gentle arm action

   C. No arm action

   D. Relaxed arm action

3. **What unit is impulse measured in in this sprinting context?**

   A. Newtons

   B. Coulombs

   C. Newtons-seconds

   D. Joules

4. **During Maximum Velocity late support, which action primarily propels the center of gravity forward?**

   A. Concentric knee extension.

   B. Eccentric hip flexion.

   C. Concentric plantar flexion.

   D. Brief concentric knee flexion.

5. **Where are the eyes focused during sprint acceleration?**

   A. Focused straight ahead

   B. Down at the feet

   C. To the side

   D. Upward into the crowd

6. For the start and acceleration issue of unnecessary dorsal tension and neck hyperextension, what is the correction?

A. Normal Head Alignment; eyes focused on ground

B. Eyes fixed forward at horizon

C. Chin tucked but head upright

D. Look up to horizon while running

7. In maximum velocity sprinting, which phase is associated with rotation of the thigh backward in preparation for foot contact?

A. Late flight

B. Early flight

C. Mid flight

D. Early support

8. In sprint start, arm action has which of the following?

A. No functions

B. Limited functions

C. Important functions

D. Variable functions

9. Peak ground reaction forces in elite sprinters during the forward support phase are generated within how many seconds?

A. 0.04

B. 0.08

C. 0.02

D. 0.06

10. In start and acceleration, which correction best addresses jumping the first stride by adjusting trunk position and leg action?

A. Increasing forward lean; maintaining proper head alignment; accelerating rear leg action

B. Upright trunk with minimal leg drive

C. Prolonged ground contact

D. Excessive arm conditioning

Answers

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

Explanations

1. In flight non-support phase, the thigh begins to move down, sweeping the lower leg backward and down with which action?

A. Pawing

B. Pushing

C. Slapping

D. Loping

In the flight non-support phase, the leg is moving through the air, so the focus is on how the leg is being directed rather than pushed off the ground. The thigh begins to move down while the lower leg sweeps backward and downward in a quick, light scooping motion. This is described as pawing—the foot feels like a quick, forward-facing paw pushing backward and down as the leg passes through the swing. This motion helps position the leg efficiently for the next ground contact, keeping the recovery compact and ready for a fast transition. Pushing would imply applying force as if to drive off the ground, which isn't happening in flight. Slapping would suggest a noisy or hitting action, or contact, which isn't the case during a non-support phase. Loping refers to a more relaxed, bouncing style rather than a specific recovery action.

2. During Maximum Velocity, leg drive is facilitated by which action?

A. Explosive arm action

B. Gentle arm action

C. No arm action

D. Relaxed arm action

Explosive arm action drives the whole sprinting rhythm at maximum velocity. When the arms move rapidly and forcefully, they create forward momentum and help stabilize the torso, which enables the hips to extend more powerfully and the legs to cycle faster. This coordinated upper-body drive boosts stride frequency and helps maintain a forward lean without breaking form, producing greater leg drive overall. Gentle or relaxed arm action wouldn't provide the needed momentum or coordination, and no arm action eliminates the upper-body contribution that helps set the pace for the legs. A completely still or overly relaxed arm swing also disrupts balance and rhythm, reducing hip extension and cadence. So the explosive arm action best supports the high-speed, powerful leg drive required at maximum velocity.

3. What unit is impulse measured in in this sprinting context?

A. Newtons

B. Coulombs

C. Newtons-seconds

D. Joules

Impulse is the product of force and the time over which that force acts, and it equals the change in momentum of the runner. In sprinting, the foot exerts a large force for a very short time, producing an impulse that changes the runner's forward momentum. Because impulse = force × time, its units are Newtons times seconds, i.e., Newton-seconds. This also matches the momentum unit (kg·m/s), since impulse changes momentum. The other options don't describe impulse: Newtons are just force, Coulombs are electric charge, and Joules are energy or work.

4. During Maximum Velocity late support, which action primarily propels the center of gravity forward?

A. Concentric knee extension.

B. Eccentric hip flexion.

C. Concentric plantar flexion.

D. Brief concentric knee flexion.

During maximum velocity late support, propulsion mainly comes from the trailing leg extending the knee quickly. This concentric knee extension straightens the leg and allows a powerful push against the ground, creating a backward ground reaction force that moves the center of gravity forward. The action is powered by the quadriceps and occurs as the leg is behind the body, driving forward momentum. Eccentric hip flexion would tend to slow or control the leg's path rather than propel it forward, brief concentric knee flexion would shorten the lever and reduce forward impulse, and while plantarflexion helps push off, the dominant forward propulsion in this phase is produced by the knee extension.

5. Where are the eyes focused during sprint acceleration?

A. Focused straight ahead

B. Down at the feet

C. To the side

D. Upward into the crowd

Where you direct your gaze during sprint acceleration affects posture, balance, and propulsion. Focusing straight ahead helps keep the head and neck in line with a tall, stable spine, allowing efficient hip extension and a solid, forward-driving posture as you push into the ground. It also keeps you aware of the track ahead, helping you time your steps and maintain rhythm without drifting. Looking down at the feet pulls the head forward and can collapse the upper body, reducing stride efficiency and power. Looking to the side or upward toward the crowd is distracting and breaks your line of sight to the track, which can disrupt balance and timing. So keeping eyes fixed straight ahead is the best choice.

6. For the start and acceleration issue of unnecessary dorsal tension and neck hyperextension, what is the correction?

A. Normal Head Alignment; eyes focused on ground

B. Eyes fixed forward at horizon

C. Chin tucked but head upright

D. Look up to horizon while running

Maintaining neutral head and neck alignment during the start and early acceleration is key to reducing unnecessary tension in the upper back and neck. When the head is kept in a normal, neutral position, the cervical spine stays stacked with the rest of the spine, allowing a stable platform for powerful trunk-to-leg force transfer. Focusing the eyes on the ground a few meters ahead helps you hold that neutral position and prevents the neck from tilting up or back into extension, which can create dorsal tension and disrupt propulsion mechanics. Looking toward the horizon or up tends to encourage neck extension and muscle contraction in the upper back, which adds stiffness and can waste energy during the drive phase. A cue that keeps the head aligned and the gaze downward supports a smoother, more efficient start and acceleration. A chin-tucked-but-head-upright cue can be inconsistent with keeping the entire head and spine in a true neutral alignment, so it's less reliable for minimizing neck tension compared with the neutral head position with eyes on the ground.

7. In maximum velocity sprinting, which phase is associated with rotation of the thigh backward in preparation for foot contact?

A. Late flight

B. Early flight

C. Mid flight

D. Early support

Late flight is the phase when the thigh rotates backward as the leg swings forward to contact the ground. This backward rotation positions the foot under the center of mass and aligns the knee and ankle for a quick, powerful ground contact, which is crucial for maximizing velocity. By preparing the foot strike in this way, the sprinter minimizes braking and sets up a strong push-off for the upcoming ground reaction force. Early flight involves the leg still moving forward toward contact, mid flight is the middle portion of the swing, and early support occurs after the foot has already contacted the ground, so none of those phases best describe the backward thigh rotation leading into foot contact.

8. In sprint start, arm action has which of the following?

A. No functions

B. Limited functions

C. Important functions

D. Variable functions

Arm action in the sprint start plays important roles for balance, momentum, and coordinated propulsion. As you explode out of the blocks, the arms help drive the body forward and keep the torso aligned with the track, preventing a backward tilt that can waste energy. The forward and backward swing of the arms creates a rhythm and timing that reinforce the leg drive, aiding quick acceleration and a strong, compact posture. This arm action also helps stabilize the upper body under the rapid forces of a sprint start, so the hips can extend smoothly and the athlete can maintain a powerful forward lean into the first steps. While the exact movement can vary by athlete, the functions are consistently important for a fast start, not merely incidental or limited.

9. Peak ground reaction forces in elite sprinters during the forward support phase are generated within how many seconds?

A. 0.04

B. 0.08

C. 0.02

D. 0.06

Peak ground reaction forces are reached very early in the stance phase for elite sprinters. When the foot lands, the leg stiffens rapidly and forcefully to propel the body forward, so the maximum ground reaction force occurs roughly 0.04 seconds (about 40 milliseconds) after contact. This rapid force-development is a hallmark of elite sprinting, driven by explosive muscle output and an efficient stretch-shortening cycle. Times like 0.06, 0.08, or 0.02 seconds imply peaks later or earlier than the typical rapid rise seen in elite sprinters, making 0.04 seconds the best match.

10. In start and acceleration, which correction best addresses jumping the first stride by adjusting trunk position and leg action?

A. Increasing forward lean; maintaining proper head alignment; accelerating rear leg action

B. Upright trunk with minimal leg drive

C. Prolonged ground contact

D. Excessive arm conditioning

Faster starts and early acceleration come from aligning the body to drive horizontally into the track, not vertically upward. Increasing forward lean positions the center of mass under the line of force, helping you push more forward as you accelerate out of the blocks. Keeping the head aligned helps maintain a stable spine and visual focus, so energy isn't wasted fighting an awkward posture. Accelerating the rear leg action is crucial because driving the back leg forward and under the hips creates a strong propulsive impulse and sets up a smoother transition to the front leg, which prevents the first stride from jumping up away from the ground. An upright trunk with minimal leg drive reduces horizontal force and keeps you more vertical, which tends to produce longer contact times and slower early acceleration. Prolonged ground contact slows the drive out of the blocks and doesn't address the mechanics that keep you compact and forward-moving. Excessive arm action can disrupt timing and rhythm, drawing energy away from the forward-drive pattern needed to prevent a jumping first stride.

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://nscasprintingrunning.examzify.com

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