

# Advanced Raceways 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

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1. A conduit run with what configuration is acceptable for pulling wire?
  - A. Two 90° bends, four 45° bends, and one box offset
  - B. Two 90° bends, three 45° bends, and one saddle
  - C. Two 90° bends, two 45° bends, and two 30° bends
  - D. Four 90° bends, and two box offsets
  
2. What is the developed length for an elbow bend in 5" conduit if the centerline radius is 20?
  - A. 7.85 inches
  - B. 25 inches
  - C. 31.4 inches
  - D. 39.25 inches
  
3. What is one method for enhancing oxygen levels in raceway systems?
  - A. Decreasing water flow
  - B. Use of aeration devices or oxygen injection systems
  - C. Using plants to produce oxygen naturally
  - D. Reducing the number of fish in the tank
  
4. A bend used for a change in direction of less than 90 degrees is called a(n) \_\_\_\_\_.
  - A. Kick
  - B. Offset
  - C. Saddle
  - D. Stub-up
  
5. The fractional equivalent of the decimal 0.015625 is?
  - A. 1/64
  - B. 1/32
  - C. 3/64
  - D. 1/16

- 6. Why is weight reduction crucial in race car performance?**
- A. It increases fuel efficiency**
  - B. It enhances acceleration, braking, and overall agility**
  - C. It improves driver visibility**
  - D. It allows for larger engines**
- 7. Which of the following best describes a "kick" in conduit bending?**
- A. A bend greater than 90 degrees**
  - B. A change in direction of less than 90 degrees**
  - C. A series of bends in the same direction**
  - D. A straight piece without bends**
- 8. What should be done to prevent PVC conduit from wrinkling during bending?**
- A. Use smaller diameter conduit**
  - B. Install airtight plugs in the ends**
  - C. Heat the conduit with a torch**
  - D. Use a bending machine**
- 9. How does a driver's skill influence race outcomes?**
- A. It has no significant impact on the results**
  - B. Skilled drivers can better manage car control and adapt to track conditions**
  - C. It primarily affects team strategy**
  - D. It governs pit stop timings**
- 10. Which type of connections provides the most secure connections for IMC/ rigid connectors and couplings?**
- A. Welded**
  - B. Soldered**
  - C. Threaded**
  - D. Crimped**

## Answers

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

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## **Explanations**

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1. A conduit run with what configuration is acceptable for pulling wire?

- A. Two 90° bends, four 45° bends, and one box offset
- B. Two 90° bends, three 45° bends, and one saddle
- C. Two 90° bends, two 45° bends, and two 30° bends**
- D. Four 90° bends, and two box offsets

A conduit run with two 90° bends, two 45° bends, and two 30° bends is considered acceptable for pulling wire as it falls within the maximum allowable number of bends and angles that can make wire pulling feasible. The National Electrical Code (NEC) provides guidelines on conduit bending, which typically restricts the number of bends in a run to ensure that wire can be pulled through without excessive force or potential damage. Specifically, the correct configuration allows for a combination of bends that provides a smoother path for the wiring. Having two 90° bends combined with 45° and 30° bends creates gentler angles, which facilitate easier wire installation. Each type of bend (45° and 30°) contributes to reducing the sharpness of the turns in the conduit, thereby making it easier to manage pulling the wire through the conduit system. Other configurations present either too many bends or the angles might be too sharp to allow for efficient wire pulling, thus making them less practical or possibly against code.

2. What is the developed length for an elbow bend in 5" conduit if the centerline radius is 20?

- A. 7.85 inches
- B. 25 inches
- C. 31.4 inches**
- D. 39.25 inches

To calculate the developed length for an elbow in conduit, you typically use the formula that takes into account the centerline radius and the size of the conduit. The developed length is essentially the length of the conduit that effectively follows the path of the bend. For a standard 90-degree bend, the developed length can be approximated by the formula: 
$$\text{Developed Length} = \text{Centerline Radius} \times \text{Angle in Radians}$$
 In this case, the centerline radius given is 20 inches. Since we're calculating for a 90-degree bend, we need to convert that degree measurement into radians. The conversion from degrees to radians is done by multiplying by  $\frac{\pi}{180}$ : 
$$90^\circ = \frac{\pi}{2} \text{ radians}$$
 Substituting this into our developed length formula gives: 
$$\text{Developed Length} = 20 \text{ inches} \times \frac{\pi}{2}$$
 To get a numerical value using  $\pi$  (approximately 3.14): 
$$20 \times \text{in}$$

**3. What is one method for enhancing oxygen levels in raceway systems?**

**A. Decreasing water flow**

**B. Use of aeration devices or oxygen injection systems**

**C. Using plants to produce oxygen naturally**

**D. Reducing the number of fish in the tank**

Using aeration devices or oxygen injection systems is an effective method for enhancing oxygen levels in raceway systems. These devices actively increase the amount of dissolved oxygen in the water, which is crucial for maintaining the health of aquatic organisms, especially in a confined environment like a raceway. Aeration devices, such as air stones, diffusers, or surface agitators, work by introducing air into the water, creating turbulence that allows for better gas exchange at the water's surface. This process increases oxygen saturation levels and helps to remove carbon dioxide, which can accumulate and negatively impact the aquatic life. Oxygen injection systems can also be implemented, where pure oxygen is injected directly into the water. This method is particularly beneficial in high-density fish farming, where the demand for oxygen may exceed natural levels due to a large biomass and high metabolic rates of the fish. The other methods listed, such as decreasing water flow or reducing the number of fish, might influence oxygen levels indirectly, but they do not actively enhance the dissolved oxygen concentration as effectively as aeration and oxygen injection systems do. For example, decreasing water flow can lead to lower oxygen levels, and while using plants can contribute to oxygen production, it often doesn't meet the immediate oxygen demands in a raceway environment compared

**4. A bend used for a change in direction of less than 90 degrees is called a(n) \_\_\_\_\_.**

**A. Kick**

**B. Offset**

**C. Saddle**

**D. Stub-up**

A bend used for a change in direction of less than 90 degrees is referred to as a kick. This term is commonly employed in various engineering and construction contexts, particularly when dealing with piping or ductwork systems. The purpose of a kick is to facilitate a slight redirection of the flow path without requiring a more complex or pronounced bend. Understanding the terminology is crucial for professionals in the field, as it helps in communicating specifications and ensuring that components fit together correctly. While there are other terms used to describe bends in piping, a kick specifically emphasizes the slight angle of deviation, making it essential for maintaining fluid dynamics and minimizing turbulence in the system. In contrast, an offset typically describes a more significant change in direction, while a saddle refers to a support structure or fitting type, and a stub-up usually pertains to a vertical extension from a horizontal piping system.

**5. The fractional equivalent of the decimal 0.015625 is?**

- A. 1/64**
- B. 1/32**
- C. 3/64**
- D. 1/16**

To understand why the fractional equivalent of the decimal 0.015625 is 1/64, it's important to convert the decimal into a fraction and simplify it. First, recognize that 0.015625 can be expressed as a fraction by placing it over 1, which gives us 0.015625/1. To eliminate the decimal, consider that there are five decimal places, so multiply both the numerator and the denominator by 100,000 (which is 10 raised to the power of 5). This transformation yields:  $0.015625 * 100,000 / 1 * 100,000 = 1562.5/100000$ . Next, simplify 1562.5/100000 by recognizing that both numbers can be divided by 1562.5. After simplification, this fraction becomes: 1/64. Converting to a fraction involves finding a balance between the value of the numerator and the denominator that captures the original decimal value precisely. In this case, 0.015625 precisely corresponds to the fraction 1/64, as both represent the same quantity in different forms. This conversion helps to clarify why the option 1/64 is the correct choice in this context, as it accurately

**6. Why is weight reduction crucial in race car performance?**

- A. It increases fuel efficiency**
- B. It enhances acceleration, braking, and overall agility**
- C. It improves driver visibility**
- D. It allows for larger engines**

Weight reduction is crucial in race car performance primarily because it enhances acceleration, braking, and overall agility. A lighter race car can gain speed more quickly since it requires less energy to move. This translates to improved acceleration, which is vital during races when every second counts. Moreover, a reduced weight also positively affects braking performance. When a car is lighter, the brakes do not have to work as hard to bring the car to a stop, which can lead to shorter braking distances and more efficient handling during deceleration. Agility is another significant factor; lighter cars can change direction more easily, making them more responsive and nimble on the track. This increased maneuverability allows for better cornering and a more competitive edge, especially in a high-speed racing environment where precision is key. While other factors like fuel efficiency and driver visibility play roles in car performance, they do not have as direct an impact on the essential aspects of racing performance as weight reduction does. Similarly, larger engines provide more power, but they do not inherently enhance performance if the overall weight of the vehicle negates potential speed benefits. Thus, focusing on weight reduction ultimately leads to a car that can perform better on the racetrack.

**7. Which of the following best describes a "kick" in conduit bending?**

- A. A bend greater than 90 degrees**
- B. A change in direction of less than 90 degrees**
- C. A series of bends in the same direction**
- D. A straight piece without bends**

The choice indicating that a "kick" in conduit bending refers to a change in direction of less than 90 degrees is accurate because it aligns with the terminology used in electrical installations. A "kick" typically describes a slight offset or deviation in the path of the conduit that directs wiring, often for the purpose of navigating obstacles or transitioning to different areas of an installation. In practical terms, this type of bend allows for finer adjustments in the conduit layout, making it essential for fitting into tight spaces or aligning sections of conduit without requiring a sharp turn. Such subtle adjustments maintain the integrity of the overall installation, reducing the risk of damaging the wiring inside the conduit. Understanding this concept is crucial for anyone involved in conduit installation or electrical work, as it directly impacts the efficiency and safety of electrical systems.

**8. What should be done to prevent PVC conduit from wrinkling during bending?**

- A. Use smaller diameter conduit**
- B. Install airtight plugs in the ends**
- C. Heat the conduit with a torch**
- D. Use a bending machine**

Using airtight plugs in the ends of PVC conduit helps to maintain pressure within the conduit during bending, which significantly reduces the risk of wrinkling. When bending PVC, especially at sharp angles, the material can become susceptible to deformation. By sealing the ends, you ensure that any air trapped inside can help support the walls of the conduit, thus maintaining its shape and integrity while allowing for a smoother bend. Employing tools like a bending machine or heating the conduit could facilitate better bends, but they do not specifically address the issue of wrinkling. Smaller diameter conduit may bend more easily, but it also does not inherently prevent wrinkling issues. Therefore, sealing the ends with airtight plugs is an effective method to preserve the shape of the PVC conduit during the bending process.

## 9. How does a driver's skill influence race outcomes?

- A. It has no significant impact on the results
- B. Skilled drivers can better manage car control and adapt to track conditions**
- C. It primarily affects team strategy
- D. It governs pit stop timings

A driver's skill is crucial in determining race outcomes as it fundamentally influences various aspects of racing performance. Skilled drivers possess a deeper understanding of vehicle dynamics and can effectively manage car control. This includes mastering techniques such as cornering, braking, and acceleration, which play a vital role in maintaining optimal speed throughout the race. Moreover, skilled drivers have the ability to adapt to changing track conditions, which can include variations in weather, surface grip, and traffic from other competitors. This adaptability can mean the difference between finishing in a leading position or falling behind, especially during challenging circumstances. Their experience also allows them to make quick decisions that can enhance their performance during the race, such as when to overtake or when to conserve tires or fuel. While other aspects like team strategy and pit stop timings are also important, the individual driver's skill is often what directly translates into effective race execution on the track. Being able to leverage their abilities under pressure, especially in high-stakes environments, sets skilled drivers apart from their competitors.

## 10. Which type of connections provides the most secure connections for IMC/ rigid connectors and couplings?

- A. Welded
- B. Soldered
- C. Threaded**
- D. Crimped

The most secure connections for IMC (Intermediate Metal Conduit) and rigid connectors and couplings are welded connections. This type of connection involves fusing the materials together, creating a bond that is very strong and can withstand significant stress and environmental factors. Welding creates a continuous joint that minimizes the risk of loosening over time, which is critical in applications where electrical safety and structural integrity are paramount. While other connection methods like threaded, soldered, and crimped can be effective in certain situations, they don't provide the same level of mechanical strength and reliability as welded connections. Threaded connections, for example, may be subject to loosening due to vibration or thermal expansion, and they require careful torque specifications. Soldered connections can be reliable, but they are generally better suited for smaller gauge wires and less demanding applications, and they can also be susceptible to joint failure under stress. Crimped connections can create strong joints but may not always guarantee the same uniform quality or strength as welded joints, primarily if not done correctly. In summary, welded connections stand out as the most secure option for IMC and rigid couplings due to their superior strength and durability.

## 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://advraceways.examzify.com>**

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