

NORTH CAROLINA FIRE INVESTIGATION TECHNICIAN (FIT) PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE**

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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. What effect does moisture have on vegetation with respect to fire?**
 - A. Increases flammability
 - B. Decreases flammability
 - C. Has no effect
 - D. Transforms vegetation into fire retardant
- 2. What happens to the skin when exposed to high temperatures in a fire?**
 - A. The skin will redden, darken, blister, split, and char
 - B. The skin will peel and flake off
 - C. The skin will remain unaffected
 - D. The skin will only redden
- 3. What is the primary source of electrical energy in a vehicle that is not running?**
 - A. The alternator
 - B. The generator
 - C. The battery
 - D. The starter motor
- 4. What type of electrical line do RVs typically have?**
 - A. Standard utility line
 - B. High voltage line
 - C. Shore line
 - D. Solar energy line
- 5. According to fire investigation principles, what is critical to establish at the hypothesized origin?**
 - A. Presence of witnesses
 - B. History of the building
 - C. A competent ignition source
 - D. Size of the fire

- 6. Which of these is the formula for calculating power?**
- A. Power = Current x Resistance
 - B. Power = Voltage + Current
 - C. Power = Voltage x Current
 - D. Power = Current / Voltage
- 7. What is the purpose of a chain of custody in evidence handling?**
- A. To ensure the evidence is displayed publicly
 - B. To maintain the evidence's integrity from collection to courtroom
 - C. To facilitate easy access to the evidence
 - D. To allow for quick disposal if needed
- 8. What type of gauge gives readings of liquid contents at various levels?**
- A. Fixed level gauge
 - B. Variable gauge
 - C. Pressure gauge
 - D. Digital gauge
- 9. What is a potential ignition source from overloaded wiring?**
- A. Cold temperatures
 - B. Resistance heating
 - C. Power surges
 - D. Short circuits
- 10. What is described as a reaction that travels through air at subsonic velocities?**
- A. Deflagration
 - B. Detonation
 - C. Flashover
 - D. Combustion

Answers

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

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Explanations

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1. What effect does moisture have on vegetation with respect to fire?

- A. Increases flammability
- B. Decreases flammability**
- C. Has no effect
- D. Transforms vegetation into fire retardant

Moisture plays a crucial role in the flammability of vegetation, primarily acting to decrease it. When vegetation is adequately hydrated, the presence of moisture within plant tissues inhibits the combustion process. Wet vegetation requires significantly more heat to ignite because the moisture content absorbs heat energy that would otherwise be used for combustion. In essence, when plants are moist, their ability to catch fire and sustain burning is greatly reduced. This is why during times of high humidity and rainfall, the chances of wildfires are typically lower compared to dry conditions where the moisture content in vegetation is minimal. Consequently, as moisture levels rise, the overall flammability of vegetation decreases, making it less susceptible to ignition and spreading of fire.

2. What happens to the skin when exposed to high temperatures in a fire?

- A. The skin will redden, darken, blister, split, and char**
- B. The skin will peel and flake off
- C. The skin will remain unaffected
- D. The skin will only redden

The correct response highlights the various stages of skin damage when it is exposed to high temperatures in a fire. Initially, as the skin encounters extreme heat, it may redden due to increased blood flow to the affected area, a typical physiological response to injury. As the temperature continues to rise, more severe damage occurs. Blisters can develop as the layers of skin separate due to the heat and the accumulation of fluid beneath the epidermis. This is a protective response of the body, signifying second-degree burns where the damage penetrates deeper than the top layer of skin. Following this, the skin may split as the thermal damage escalates, further exposing underlying tissues and causing significant pain and risk of infection. In more extreme cases, if the temperatures are sufficiently high and prolonged, the skin can char, leading to a blackened appearance caused by the destruction of tissues. This sequence illustrates the progression of burn injuries, emphasizing that high temperatures have a progressively worsening impact on skin integrity, clearly aligning with the description provided in the answer choice.

3. What is the primary source of electrical energy in a vehicle that is not running?

- A. The alternator
- B. The generator
- C. The battery**
- D. The starter motor

The primary source of electrical energy in a vehicle that is not running is the battery. The battery stores electrical energy in chemical form and provides the necessary power to start the vehicle and run electrical components, such as lights, radio, and dashboard displays, when the engine is off. In a non-running vehicle, both the alternator and generator are not operational because they only generate electricity when the engine is running. The alternator works by converting mechanical energy from the engine into electrical energy to recharge the battery and power electrical systems while the vehicle is running. Similarly, a generator, which is less common in modern vehicles, also requires the engine to function. The starter motor is responsible for turning the engine over to initiate the combustion process, but it is only utilized briefly during startup and does not serve as a continuous source of electrical energy. Therefore, the battery remains the sole source of electrical energy when the vehicle is not in operation, making it the correct answer to this question.

4. What type of electrical line do RVs typically have?

- A. Standard utility line
- B. High voltage line
- C. Shore line**
- D. Solar energy line

Recreational vehicles (RVs) typically use a shore line for their electrical connections when connecting to external power sources. A shore line is essentially a power cord that allows the RV to connect to a standard electrical outlet at campgrounds or other facilities, providing the necessary electricity to operate appliances, lighting, and other electrical systems within the RV. This type of line is designed to be safe and effective for use in outdoor environments, taking into account the specific needs of RV electrical systems. Shore lines are usually rated for the appropriate amperage and voltage required by RVs, ensuring that the electrical supply is sufficient for typical usage without the risks associated with higher voltage lines or permanent utility connections. In contrast, the other options either refer to electrical systems that do not align with typical RV usage—high voltage lines, for instance, are not safe or practical for RV connections—or represent alternative energy sources, such as solar energy lines, which while increasingly popular for powering RVs, do not define the standard electrical connection type.

5. According to fire investigation principles, what is critical to establish at the hypothesized origin?

- A. Presence of witnesses
- B. History of the building
- C. A competent ignition source**
- D. Size of the fire

Establishing a competent ignition source at the hypothesized origin is critical in fire investigation because it helps to confirm how the fire initiated. Identifying the ignition source allows investigators to connect the cause of the fire to the materials that were present, leading to a better understanding of how the fire spread and developed. This is crucial for determining whether the fire was accidental, intentional, or a result of negligence. While the presence of witnesses, the history of the building, and the size of the fire can provide valuable context and support conclusions about the fire's circumstances, they do not directly establish the cause of the fire. A competent ignition source is fundamental to linking the fire's origin to the subsequent fire behavior and ultimately to the investigation's findings about responsibility and prevention.

6. Which of these is the formula for calculating power?

- A. Power = Current x Resistance
- B. Power = Voltage + Current
- C. Power = Voltage x Current**
- D. Power = Current / Voltage

The correct formula for calculating power in an electrical circuit is defined as $\text{Power} = \text{Voltage} \times \text{Current}$. This relationship stems from Ohm's Law, where voltage (V) is the product of current (I) and resistance (R). When you rearrange the formula for power in terms of voltage and current, it becomes evident that if you multiply the voltage across a circuit by the current flowing through it, you get the total power consumed or produced. This fundamental formula is crucial in various fields, including electronics and electrical engineering, as it helps professionals and technicians understand how much energy is being used or transferred in a circuit. Additionally, knowing how to compute power accurately enables better management of electrical systems, ensuring safety and efficiency. In contrast, other formulas given do not accurately represent power. For instance, multiplying current by resistance gives you voltage, not power. Simply adding voltage and current does not yield any meaningful electrical measurement. Dividing current by voltage results in a value with units of conductance, which also does not relate to power directly. Thus, the accurate use and understanding of the power formula are essential for effective fire investigation and electrical safety assessments.

7. What is the purpose of a chain of custody in evidence handling?

- A. To ensure the evidence is displayed publicly
- B. To maintain the evidence's integrity from collection to courtroom**
- C. To facilitate easy access to the evidence
- D. To allow for quick disposal if needed

The purpose of a chain of custody in evidence handling is to maintain the evidence's integrity from the moment it is collected until it is presented in court. This involves documenting every person who handled the evidence, along with the times and conditions under which it was transferred or accessed. By establishing a clear chain of custody, investigators can ensure that the evidence has not been tampered with, altered, or otherwise compromised throughout the investigative process. This is critical for the legal process, as a well-maintained chain of custody enhances the credibility of the evidence, ensuring that it can be reliably used to support findings in court. The other options do not accurately reflect the primary significance of a chain of custody. Displaying evidence publicly does not protect its integrity, while facilitating easy access or allowing for quick disposal contradicts the fundamental requirement of maintaining evidence in a secure and tamper-proof manner.

8. What type of gauge gives readings of liquid contents at various levels?

- A. Fixed level gauge
- B. Variable gauge**
- C. Pressure gauge
- D. Digital gauge

The variable gauge is designed to measure and indicate the level of liquid contents within a container at various points. It operates by utilizing a mechanism that adapts to changes in the liquid level, enabling it to provide continuous readings rather than a single fixed measurement. This adaptability makes it particularly useful for applications where the liquid level may fluctuate, such as in tanks or reservoirs. In many scenarios, a variable gauge can be mechanical or electronic, incorporating technologies like floats, sensors, or sight glasses that respond to the liquid's surface. This capability is essential for fire investigation technicians who need to understand the presence and quantity of flammable liquids in storage tanks or containers. Other types of gauges, such as fixed level gauges, typically indicate whether the liquid is at a specific level rather than providing a range, while pressure gauges measure the pressure inside a system rather than liquid level. Digital gauges may also represent various data types but are not specifically designed to indicate levels at multiple points of liquid contents compared to variable gauges. Thus, the variable gauge is the most suitable answer in this context.

9. What is a potential ignition source from overloaded wiring?

- A. Cold temperatures
- B. Resistance heating**
- C. Power surges
- D. Short circuits

Resistance heating is a key mechanism that can lead to ignition in the context of overloaded wiring. When electrical current passes through a wire that is carrying more load than it is rated for, the resistance of that wire generates heat. This heat can accumulate and eventually reach a temperature that ignites surrounding materials, particularly in environments where flammable substances may be present. Overloaded wiring occurs when circuits are subjected to loads that exceed their design specifications, often because of the addition of more devices or appliances than they can handle. As the current flows through the increased resistance caused by overheating, the excessive heat buildup can become a critical factor leading to ignition, particularly in older or poorly maintained wiring systems. In contrast, cold temperatures do not provide a direct ignition source; they generally reduce the susceptibility of materials to burn. Power surges, while they can contribute to electrical failures, do not directly cause overheating in the same way as continuous overloads do. Short circuits, while a serious electrical hazard, typically result from a fault condition that provides an alternative pathway for the current, often bypassing the normal load and resulting in instant failure rather than a gradual buildup of heat.

10. What is described as a reaction that travels through air at subsonic velocities?

A. Deflagration

B. Detonation

C. Flashover

D. Combustion

Deflagration refers to a rapid reaction that occurs at subsonic speeds, typically resulting in the combustion of a fuel in the presence of an oxidizer. In this process, the combustion wave travels through the gas mixture at a velocity slower than the speed of sound in that medium, creating a thermal wave instead of a shock wave. This type of reaction is characterized by a gradual buildup of heat and pressure that can lead to flames spreading through the material. Deflagration is differentiated from detonation, which involves a supersonic reaction that produces a shock wave, thereby leading to a more explosive effect. Flashover and combustion, while related to the broader context of fire dynamics, do not specifically describe the characteristics of a reaction that propagates through air at subsonic velocities in the same way that deflagration does. Understanding this difference is essential for fire investigation technicians as it aids in analyzing fire dynamics and the behavior of materials during combustion.

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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://ncfit.examzify.com>

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

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