

GATE 3 AIRSTREAMS RENEWABLE 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. In Relative Mode, the reading shown is always the difference between the present reading and the stored reference value.
 - A. True
 - B. False
 - C. Not used
 - D. Unknown
2. The Fluke 87V Meter measures the _____ of a voltage or current signal by counting the number of times the signal crosses a threshold level each second.
 - A. Amplitude
 - B. Phase
 - C. Duty cycle
 - D. By counting the number of times the signal crosses a threshold per second
3. Which of the following describes the meter described in the material?
 - A. Analog meter
 - B. Clamp-on meter
 - C. Digital thermometer
 - D. Oscilloscope
4. Which set of voltages is commonly used for insulation measurements with a hipot tester?
 - A. 125, 250 or 500 volts
 - B. 250, 500 or 1000 volts
 - C. 100, 250 or 500 volts
 - D. 300, 600 or 1200 volts
5. Insulated tools are used to perform work on _____ equipment.
 - A. De-Energized
 - B. Grounded
 - C. Isolated
 - D. Energized

- 6. Where is the hold button located on the amp clamp?**
- A. On the top
 - B. On the side
 - C. On the bottom
 - D. Inside the handle
- 7. The three basic properties of AC voltage are.**
- A. Phase, Resistance, Capacitance
 - B. Wavelength, Velocity, Modulus
 - C. Period or Time, Frequency, Amplitude
 - D. Power, Energy, Impedance
- 8. What is the unit of resistance?**
- A. Volts
 - B. Amperes
 - C. Ohms
 - D. Farads
- 9. In a DC series circuit the ____.**
- A. Current is constant and voltage varies.
 - B. Voltage is constant and current varies.
 - C. Resistance changes with time.
 - D. Power is zero.
- 10. Which of the following is a listed benefit of the amp clamp?**
- A. Slow and inaccurate
 - B. High cost
 - C. Requires frequent calibration
 - D. No current loss

Answers

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

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Explanations

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1. In Relative Mode, the reading shown is always the difference between the present reading and the stored reference value.

A. True

B. False

C. Not used

D. Unknown

Relative mode is about measuring change from a known reference. The instrument keeps a stored reference value and, when a new reading is taken, it shows the difference between the current reading and that reference. This delta display makes it easy to see how much the signal has moved since the reference, rather than its absolute level. So the reading shown being the difference between the present reading and the stored reference value is exactly what relative mode does, making this statement true. If you needed the exact, absolute value, you'd use a mode that displays the current reading directly rather than the delta.

2. The Fluke 87V Meter measures the _____ of a voltage or current signal by counting the number of times the signal crosses a threshold level each second.

A. Amplitude

B. Phase

C. Duty cycle

D. By counting the number of times the signal crosses a threshold per second

Measuring how often a repeating signal repeats itself by counting how many times it crosses a fixed reference level each second. The Fluke 87V uses this approach in its frequency function: it watches the waveform and increments a count each time the signal crosses the reference level (often around zero volts for AC). That crossing rate translates into cycles per second (hertz). This is different from amplitude (how tall the peaks are), phase (timing relative to another signal), or duty cycle (the fraction of time the signal stays high in a cycle). With a clean waveform, the crossing count provides an accurate frequency; noise or distorted shapes can affect the readout.

3. Which of the following describes the meter described in the material?

A. Analog meter

B. Clamp-on meter

C. Digital thermometer

D. Oscilloscope

Think about what actually defines how this meter works. A clamp-on meter is identified by its hinged jaw that clips around a single conductor. The device reads current by sensing the magnetic field produced by that conductor, so you can measure current without breaking the circuit or making contact with the wires. That noninvasive, clip-around design is the key trait. An analog meter is defined by its needle and dial display, which could be used for many measurements, not specifically current. A digital thermometer measures temperature with a temperature sensor, not electrical current. An oscilloscope shows voltage versus time to visualize signals, which is more about waveform display than measuring current with a clamped conductor. So the description that points to a clamp-on meter fits best because it highlights the distinctive clamping mechanism used to measure current.

4. Which set of voltages is commonly used for insulation measurements with a hipot tester?

- A. 125, 250 or 500 volts
- B. 250, 500 or 1000 volts**
- C. 100, 250 or 500 volts
- D. 300, 600 or 1200 volts

High-pot or hipot insulation testing uses a high voltage to stress the insulation between conductors and ground so any breakdown paths or excessive leakage show up. The voltages chosen for this testing are standard because they cover a wide range of equipment ratings while leaving a safe margin above normal operating voltage. The commonly used set—250, 500, and 1000 volts—lets you test everything from lower-voltage devices to higher-voltage gear without needing unusual levels. This progression fits typical insulation classes and aligns with what many test standards and instruments provide as preset levels, making testing practical and the results comparable. Other sets may either be too low for higher-rated insulation or include voltages that aren't as commonly used in standard testing, which is why they aren't as widely adopted.

5. Insulated tools are used to perform work on ____ equipment.

- A. De-Energized
- B. Grounded
- C. Isolated
- D. Energized**

Insulated tools are designed to protect you from electric shock when there is a risk that current could flow through the tool. They create a non-conductive barrier between your hand and any live parts, which is crucial when you must work on equipment that could still be energized. The insulation is rated for a certain voltage, so if you accidentally touch a live conductor, the current is less likely to reach you. If the equipment is fully de-energized and properly locked out, the primary benefit of insulating tools isn't needed for shock protection, though using the right tools for the situation is still good practice. Tools aren't what isolates or grounds a circuit; isolation and grounding are separate safety measures that manage fault paths and electrical connectivity. So, insulated tools are used to perform work on energized equipment to reduce the risk of shock if contact with live parts occurs.

6. Where is the hold button located on the amp clamp?

- A. On the top
- B. On the side**
- C. On the bottom
- D. Inside the handle

The hold button on an amp clamp is placed where you can press it with one hand while keeping a stable grip on the meter. That's why it's typically on the side—the thumb or fingers can reach it easily while you're clamping around a conductor. Pressing hold freezes the current display reading so you can record it or compare it later without the value changing as you read the screen or move the clamp. Put it on the top, bottom, or inside the handle would make pressing it awkward or require re-gripping the device, which is why the side position is preferred. If a model differs, consult the manual, but side is the standard location for quick, one-handed operation.

7. The three basic properties of AC voltage are.

- A. Phase, Resistance, Capacitance
- B. Wavelength, Velocity, Modulus
- C. Period or Time, Frequency, Amplitude
- D. Power, Energy, Impedance

AC voltage is a time-varying signal described by how tall the peaks are and how the waveform repeats in time. The fundamental properties here are amplitude (the maximum voltage), the period (the time for one complete cycle), and the frequency (how many cycles occur each second). The period and frequency are inverses of each other, $T = 1/f$, and the waveform can be expressed as $v(t) = V_p \sin(\omega t)$ with $\omega = 2\pi f$. The other options mix quantities that aren't intrinsic to the basic waveform itself—like circuit elements (resistance, capacitance, impedance) or quantities tied to energy or space (power, energy, wavelength, velocity). So the trio of period, frequency, and amplitude best captures the essential characteristics of an AC voltage.

8. What is the unit of resistance?

- A. Volts
- B. Amperes
- C. Ohms
- D. Farads

Resistance is how much a component slows down or limits electric current. The unit for this is the ohm (Ω). It's defined so that one ohm is the resistance between two points of a conductor when a constant potential difference of one volt, applied to those points, produces a current of one ampere, with one watt of power being dissipated. Put simply, Ohm's law $V = I \times R$ means resistance equals voltage divided by current. So if you apply 1 volt and observe 1 ampere, the resistance is 1 ohm. The other terms are units for voltage (volts), current (amperes), and capacitance (farads).

9. In a DC series circuit the _____.

- A. Current is constant and voltage varies.
- B. Voltage is constant and current varies.
- C. Resistance changes with time.
- D. Power is zero.

In a DC series circuit, there is only one path for current, so the same current flows through every component. Because the current is the same throughout, the voltage across each element depends on its resistance ($V = I \times R$). The total supply voltage is the sum of these drops, so the voltage is divided among the components and can vary from one element to another. This means the current is constant while the voltages across components differ. The other statements don't fit: the current isn't varying in a simple series circuit, resistances don't have to change with time, and power isn't zero as long as there's current.

10. Which of the following is a listed benefit of the amp clamp?

- A. Slow and inaccurate
- B. High cost
- C. Requires frequent calibration
- D. No current loss**

The main idea here is measuring current without loading the circuit. An amp clamp works by encasing a single conductor in a magnetic core; as current flows, it creates a magnetic field that the sensor reads (transformer principle for AC or Hall effect for DC). Because the conductor isn't broken or placed through a measuring element, the circuit's current path isn't altered, so there's no additional resistance or burden—no current loss. That non-invasive measurement is the clear benefit. The other options describe drawbacks and aren't advantages of using a clamp; they would imply changed, costly, or less accurate measurements, which isn't what the amp clamp aims to provide.

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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://airstreamgate3.examzify.com>

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

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