

Associate Certified Electronics Technician (CET) Practice Exam (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. What component is most commonly used as an audio detector in an AM radio?**
 - A. Transistor**
 - B. Diode**
 - C. Capacitor**
 - D. Inductor**

- 2. Which of these can be used to control the output level of a generator?**
 - A. A small AC voltage applied to the armature**
 - B. A small DC voltage applied to the field winding**
 - C. A large DC voltage applied to the generator output**
 - D. An external resistor in series with the generator**

- 3. How does an inductor behave to changes in AC current directly?**
 - A. It amplifies the current immediately.**
 - B. It removes all AC signals.**
 - C. It opposes changes in AC current.**
 - D. It allows constant flow regardless of frequency.**

- 4. What type of connection is typical for a modern personal printer?**
 - A. VGA connection**
 - B. RJ-45 connection**
 - C. USB connection**
 - D. RS-232 connection**

- 5. A power supply that maintains a constant output voltage regardless of load would have what percent of regulation?**
 - A. 100%**
 - B. 50%**
 - C. 0%**
 - D. 10%**

- 6. How is a "video signal" defined?**
- A. Composite including audio and video**
 - B. Baseband including visual information**
 - C. Analog signal with no information**
 - D. Digital signal with compressed data**
- 7. Which component most closely compares to the output of a solar cell?**
- A. A standard lead-acid battery**
 - B. A NiCad battery**
 - C. A lithium-ion battery**
 - D. A supercapacitor**
- 8. In which situation would an analog VOM be preferred over a DMM?**
- A. For measuring high currents**
 - B. For intermittent fluctuations**
 - C. For digital signals**
 - D. For low resistance readings**
- 9. What is one advantage of using a block diagram in electronics?**
- A. It shows detailed component connections**
 - B. It provides a simple overview of system functionality**
 - C. It is easier to analyze mathematically**
 - D. It indicates exact voltages and currents**
- 10. What happens to the output voltage if the primary turns of a transformer are increased?**
- A. The output voltage decreases**
 - B. The output voltage increases**
 - C. The output voltage remains constant**
 - D. The output voltage becomes negative**

Answers

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

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Explanations

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1. What component is most commonly used as an audio detector in an AM radio?

- A. Transistor
- B. Diode**
- C. Capacitor
- D. Inductor

In an AM radio, the most commonly used component for audio detection is the diode. The diode's main function in this context is to demodulate the amplitude-modulated signal by detecting the variations in amplitude that carry the audio information. When an AM signal is applied to the diode, it allows current to flow only in one direction, effectively extracting the audio signal from the modulated carrier wave. This process is known as envelope detection, which converts the varying amplitude of the AM signal back into the original audio waveform. Other components, such as transistors, capacitors, and inductors, play important roles in various parts of an AM radio circuit, but they do not primarily function as audio detectors. Transistors, for instance, can be used for amplification but are not specific to the detection process. Capacitors and inductors are often involved in tuning and filtering but do not perform the actual demodulation of the AM signal. Therefore, the diode stands out as the key component for audio detection in AM radios.

2. Which of these can be used to control the output level of a generator?

- A. A small AC voltage applied to the armature
- B. A small DC voltage applied to the field winding**
- C. A large DC voltage applied to the generator output
- D. An external resistor in series with the generator

The correct answer is the application of a small DC voltage to the field winding of the generator. This method is essential for controlling the output level of a generator because the field winding generates the magnetic field required for electricity production. By varying the amount of DC voltage applied to the field winding, the magnetic field strength can be adjusted, which directly influences the generator's output voltage. Increasing the voltage to the field winding enhances the strength of the magnetic field, leading to a higher output voltage from the generator, whereas decreasing the voltage results in a weaker magnetic field and lower output voltage. This is an effective and commonly used method in various types of generators to maintain a steady output despite changes in load conditions, ensuring compatibility with the demands of the connected electrical system. Using a small AC voltage applied to the armature does not effectively control the output level, as this would primarily induce an alternating current but not provide a consistent means to regulate the overall output voltage of the generator. A large DC voltage at the output could potentially damage the generator or create unsafe conditions rather than allow for proper control. An external resistor could be used to limit current under certain circumstances, but it would not provide a reliable method to control the generator's output voltage effectively.

3. How does an inductor behave to changes in AC current directly?

- A. It amplifies the current immediately.
- B. It removes all AC signals.
- C. It opposes changes in AC current.**
- D. It allows constant flow regardless of frequency.

An inductor is a passive electrical component that stores energy in a magnetic field created by the flow of current through a coil of wire. When it comes to alternating current (AC), the behavior of an inductor is particularly important. As AC current changes direction and magnitude over time, the inductor reacts to these changes by opposing them. This opposition is known as inductance, which is a fundamental characteristic of inductors. When the current through an inductor attempts to change, the magnetic field surrounding the inductor also changes. According to Lenz's Law, the inductor generates a back electromotive force (emf) that acts in the opposite direction to the change in current, effectively resisting that change. This results in a delay in the current's response to the applied voltage, leading to a phase shift where the current lags behind the voltage in an AC circuit. This behavior is significant in applications such as filtering, energy storage, and oscillation circuits, where the control of current flow is crucial. Understanding that inductors oppose changes in AC current is key to grasping how they function within electrical systems and circuits.

4. What type of connection is typical for a modern personal printer?

- A. VGA connection
- B. RJ-45 connection
- C. USB connection**
- D. RS-232 connection

A modern personal printer typically utilizes a USB connection for several reasons. USB (Universal Serial Bus) is the standard interface used for connecting peripheral devices to computers and other devices due to its simplicity and widespread adoption. This connection type allows for fast data transfer rates, which is essential for efficient printing, as it can handle large amounts of data quickly and reliably. Additionally, most computers and printers today come equipped with USB ports, making it easy for users to connect their devices without the need for additional adapters or converters. USB connections support plug-and-play functionality, which means that devices can be connected and recognized without any complex setup procedures, enhancing user convenience. Other connection types, such as VGA, RJ-45, and RS-232, are less common in the context of modern printing. VGA is primarily used for video output, RJ-45 pertains to network connections for Ethernet, and RS-232 is an older serial communication standard that has largely been replaced by more modern interfaces like USB. Thus, USB stands out as the most suitable and typical connection type for personal printers in contemporary settings.

5. A power supply that maintains a constant output voltage regardless of load would have what percent of regulation?

- A. 100%**
- B. 50%**
- C. 0%**
- D. 10%**

A power supply that maintains a constant output voltage regardless of load would have zero percent regulation. This is because regulation in this context refers to the ability of the power supply to keep its output voltage stable despite fluctuations in the load current. If the output voltage remains unchanged when the load varies, it indicates that the supply is functioning ideally without any deviation in output voltage due to changes in load. Zero percent regulation signifies that there is no change in output voltage when there is a change in load, which reflects the perfect performance of the power supply in maintaining its specified output. In practical terms, realistic power supplies may have some degree of variation (non-zero regulation) due to internal resistance and other factors, but the concept being tested here is the ideal scenario where regulation is perfect.

6. How is a "video signal" defined?

- A. Composite including audio and video**
- B. Baseband including visual information**
- C. Analog signal with no information**
- D. Digital signal with compressed data**

A video signal is defined as baseband including visual information, which accurately reflects the essence of what a video signal is. Baseband signals refer to the original form of a signal that has not been modulated for transmission. In the case of video, this means that the signal carries visual information without undergoing modulation to a higher frequency. This is crucial because the clarity and fidelity of the images displayed depend on the integrity of the baseband signal. The video component consists of the necessary visual information that allows images to be rendered on screens. The other options either do not capture the specific definition of a video signal or apply to different contexts. For instance, a composite signal typically combines audio and video into a single signal, which may not always convey just the video component. An analog signal that carries no information does not define a video signal, as video signals must carry distinct visual data, whether in analog or digital formats. On the other hand, while digital signals can represent video information, the inclusion of "compressed data" in the definition does not always apply, as video signals can also be uncompressed. Therefore, the choice that clearly defines a video signal as baseband including visual information is the most accurate.

7. Which component most closely compares to the output of a solar cell?

- A. A standard lead-acid battery**
- B. A NiCad battery**
- C. A lithium-ion battery**
- D. A supercapacitor**

The output of a solar cell is typically characterized as a direct current (DC) voltage that is produced from sunlight exposure. Among the options provided, the NiCad (Nickel-Cadmium) battery most closely compares to this output. NiCad batteries are rechargeable and known for their ability to deliver a consistent voltage output over their discharge cycle, similar to how solar cells produce a relatively stable voltage output when exposed to light. They can also be charged with various power sources, including the output from solar cells. In contrast, lead-acid batteries, lithium-ion batteries, and supercapacitors have different discharge characteristics, efficiencies, and charging requirements that do not align as closely with the output nature of a solar cell. Lead-acid batteries are heavier and are primarily used for higher capacity applications, while lithium-ion batteries offer higher energy density and charge/discharge efficiencies. Supercapacitors are designed for rapid discharge and charge cycles, providing short bursts of power rather than a steady voltage output, making them less similar to a solar cell in this context. Thus, the similarities in functionality and application make the NiCad battery the best comparison to the output of a solar cell.

8. In which situation would an analog VOM be preferred over a DMM?

- A. For measuring high currents**
- B. For intermittent fluctuations**
- C. For digital signals**
- D. For low resistance readings**

An analog Volt-Ohm Meter (VOM) is preferred in situations where intermittent fluctuations in a signal need to be observed. This preference arises from the analog meter's needle movement, which responds in real-time to changes in the voltage or current being measured. The smooth, continuous motion of the needle allows a technician to visually perceive rapid changes or fluctuations more effectively than a Digital Multimeter (DMM), which may display the value in a digitized format that could lag or miss quick transient changes. In scenarios where signals are fluctuating rapidly, the analog VOM provides immediate visual feedback, allowing the technician to identify the peak and valley points of the signal during measurement. This dynamic response is particularly useful in troubleshooting and diagnosing circuits that have unstable or varying characteristics. Other options, such as measuring high currents, digital signals, and low resistance readings, do not specifically leverage the unique strengths of an analog VOM compared to a DMM, which can often handle these tasks with better precision and display capabilities. Therefore, for applications focused on transient or intermittent signals, an analog VOM is distinctly advantageous.

9. What is one advantage of using a block diagram in electronics?

- A. It shows detailed component connections**
- B. It provides a simple overview of system functionality**
- C. It is easier to analyze mathematically**
- D. It indicates exact voltages and currents**

Using a block diagram in electronics offers a significant advantage by providing a simple overview of system functionality. Block diagrams are designed to illustrate the relationships and interactions between different system components at a high level, without delving into the specifics of every connection or component. This abstraction allows engineers, technicians, and stakeholders to quickly grasp how the system operates, identify key functional areas, and see how various parts are related. The simplicity of block diagrams makes them particularly useful during the initial design phase, for presenting concepts to a non-technical audience, or for troubleshooting, as it highlights the flow of information or power through the system without the clutter of detailed circuit drawings. This clarity aids in communication and can streamline the design process, enabling teams to focus on overall functionality and performance. The other answer choices refer to aspects that block diagrams do not primarily convey. Detailed component connections, exact voltages and currents, and mathematical analysis are typically found in schematics or circuit diagrams rather than block diagrams, which emphasize high-level system organization instead.

10. What happens to the output voltage if the primary turns of a transformer are increased?

- A. The output voltage decreases**
- B. The output voltage increases**
- C. The output voltage remains constant**
- D. The output voltage becomes negative**

In a transformer, the relationship between the primary and secondary voltages is governed by the turns ratio, which is the ratio of the number of turns of wire in the primary coil to the number of turns in the secondary coil. When the number of turns on the primary side is increased, it affects the turns ratio. An increase in the number of primary turns, while keeping the number of secondary turns constant, results in a higher primary voltage being required to achieve the same magnetic flux in the transformer core. According to the transformer equation, which states that the voltage ratio is equal to the turns ratio, when the primary turns increase and the secondary turns remain unchanged, the output voltage on the secondary side also increases. This means that a higher input voltage will be transformed into a higher output voltage, assuming the transformer is functioning within its design limits. Therefore, increasing the primary turns leads to an increase in the secondary output voltage.

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://associatecertifiedelectronicstechnician.examzify.com>

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

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