ASSOCIATE CERTIFIED ELECTRONICS TECHNICIAN (CET) PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. What does a capacitor marked 47K typically represent?

A. 47µF ± 10%

B. 47nF ± 10%

C. 47pF ± 10%

D. 47µF ± 5%

2. In an electronic circuit, capacitors are primarily used to store energy as what?

A. AC voltage

B. DC voltage

C. Electrostatic field

D. Magnetic energy

3. Which component would be considered part of a "basic" power supply?

A. Resistor

B. Diode rectifier

C. Transistor

D. Inductor

4. A phase locked loop circuit contains a VCO. What does the output of the VCO consist of?

A. A DC constant frequency signal

B. A DC variable frequency signal

C. An AC variable frequency signal

D. An AC constant frequency signal

5. 0 dBm V corresponds to what level of received TV signal?

A. 100 microvolts

B. 1000 microvolts

C. 10,000 microvolts

D. 1 microvolt

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6. According to Fleming's Left-Hand Rule, a current carrying conductor placed in a magnetic field tends to move in which direction relative to the magnetic lines of flux?

A. Parallel

B. Perpendicular

C. Opposite

D. Along

7. In computer technology, what does ROM signify?

A. Read-Only Memory

B. Random Access Memory

C. Write-Once Memory

D. Temporary Storage

8. What can cause standing waves on a transmission cable?

A. Poor termination

B. Excessive cable length

C. High ambient temperature

D. Improper impedance matching

9. What is the effect of using a resistor instead of an inductor in a power supply pi filter?

A. It reduces efficiency

B. It increases voltage

C. All of the above

D. None of the above

10. What causes coaxial cable line losses at RF frequencies?

A. Signal interference

B. Low bandwidth

C. Wire resistance, capacitive and inductive reactance

D. Insulation breakdown

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Answers

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

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Explanations

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1. What does a capacitor marked 47K typically represent?

A. 47µF ± 10%

B. 47nF ± 10%

C. 47pF ± 10%

D. 47µF ± 5%

A capacitor marked with a value of 47K typically signifies a capacitance of 47 picofarads (pF), with a tolerance of ±10%. This notation is based on the use of a three-digit code where letters represent a multiplier. In this case, "K" corresponds to 1,000 in the context of capacitance, indicating the value should be multiplied by a factor of 1. This results in a capacitance value of 47 pF. Understanding this coding and labeling method is essential for properly identifying and using capacitors in electronic circuits. Although capacitors can come in various values and tolerances, they often use standard designations to convey their specifications succinctly. Therefore, recognizing this format and understanding that "K" represents picofarads here is crucial for correct implementation.

2. In an electronic circuit, capacitors are primarily used to store energy as what?

A. AC voltage

B. DC voltage

C. Electrostatic field

D. Magnetic energy

In an electronic circuit, capacitors are primarily used to store energy in an electrostatic field. When a capacitor is charged, it holds energy in the form of an electric field created between its plates due to the difference in voltage across them. This stored energy can be released when the circuit requires it, allowing capacitors to play vital roles in various applications such as smoothing out voltage fluctuations, filtering signals, and providing timing elements in circuits. Understanding the concept of the electrostatic field is key here. As voltage is applied across the capacitor, one plate accumulates positive charge while the other accumulates an equal amount of negative charge, leading to the establishment of the electric field between them, which is the mechanism by which the energy is stored. The other options do not accurately describe the primary function of a capacitor. While capacitors can interact with both AC and DC voltages in circuits, they are not typically characterized by storing voltage itself but rather the energy in the electrostatic field that develops as a result of the applied voltage. Similarly, magnetic energy pertains to inductors, not capacitors, which means that option focusing on magnetic energy does not align with the fundamental operation of capacitors.

3. Which component would be considered part of a "basic" power supply?

A. Resistor

B. Diode rectifier

C. Transistor

D. Inductor

A basic power supply typically includes a diode rectifier as a fundamental component. The role of the diode rectifier is crucial because it converts alternating current (AC) into direct current (DC), which is necessary for many electronic circuits. This conversion is one of the primary functions of a power supply, making the diode rectifier an essential element. In contrast, while a resistor is often used for current limiting or voltage division, it does not perform the essential task of converting power. A transistor can act as an amplifier or a switch but is not a necessary component for basic power supply functionality. An inductor may be utilized in more complex power supply designs, such as in filtering applications, but it is not a defining part of what constitutes a basic power supply. The simplicity and fundamental nature of the diode rectifier in the process of power conversion is the reason it's identified as a key component in a basic power supply.

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4. A phase locked loop circuit contains a VCO. What does the output of the VCO consist of?

A. A DC constant frequency signal

B. A DC variable frequency signal

C. An AC variable frequency signal

D. An AC constant frequency signal

The output of a Voltage-Controlled Oscillator (VCO) in a phase-locked loop (PLL) circuit is an AC variable frequency signal. This is because a VCO generates an output frequency that changes based on the magnitude of the input control voltage. When the control voltage is varied, the frequency of the output signal also varies, making it an AC signal. In the context of a phase-locked loop, this dynamic frequency output is crucial for synchronizing the frequency of the VCO with a reference signal. The ability to adjust the frequency allows the PLL to maintain a lock on the input signal by continuously tuning the VCO to match the frequency and phase of the incoming signal. The other options are not suitable because they either describe a constant frequency (which would not be characteristic of a VCO) or incorrectly classify the output as DC when it is inherently an AC signal due to the nature of oscillation. The VCO's function is specifically designed to produce a signal that oscillates at varying frequencies rather than generating a steady DC signal.

5. 0 dBm V corresponds to what level of received TV signal?

A. 100 microvolts

B. 1000 microvolts

C. 10,000 microvolts

D. 1 microvolt

A level of 0 dBmV corresponds to a voltage level of 1 millivolt across a 75-ohm load. To convert this into microvolts, you simply need to recognize that 1 millivolt is equivalent to 1000 microvolts. Therefore, 0 dBmV indicates a received TV signal strength of 1000 microvolts. This relationship is fundamental in working with telecommunications and television signals, especially when understanding the metrics used to gauge signal strength. Recognizing dBmV helps technicians ensure the proper functioning of digital television systems, as adequate signal strength is crucial for minimizing interference and maintaining signal quality. The options that do not correspond to this conversion clearly do not adhere to the voltage level established by the dBmV standard, further highlighting why the chosen answer correctly reflects the voltage representation of 0 dBmV.

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6. According to Fleming's Left-Hand Rule, a current carrying conductor placed in a magnetic field tends to move in which direction relative to the magnetic lines of flux?

A. Parallel

B. Perpendicular

C. Opposite

D. Along

Fleming's Left-Hand Rule serves as a mnemonic for understanding the direction of force experienced by a current-carrying conductor in a magnetic field. According to this principle, when you arrange your thumb, first finger, and second finger of your left hand so that they are mutually perpendicular to each other, the thumb points in the direction of the force (or motion) experienced by the conductor, the first finger indicates the direction of the magnetic field (from North to South), and the second finger shows the direction of current (from positive to negative). In this context, the movement of the conductor is indeed perpendicular to the magnetic lines of flux. This is a fundamental principle in electromechanical systems, such as electric motors, where the relationship between current, magnetic fields, and motion is essential for functionality. Understanding that the movement is perpendicular helps in visualizing how motors and generators convert electrical energy into mechanical energy and vice versa. The other options do not accurately describe the relationship: movement parallel to the magnetic field lines would not effectively harness the electromagnetic force, and moving opposite or along the lines of flux does not correspond to the physical behavior dictated by Fleming's Left-Hand Rule. Therefore, the indication of perpendicular movement precisely captures the essence of the interaction between

7. In computer technology, what does ROM signify?

A. Read-Only Memory

B. Random Access Memory

C. Write-Once Memory

D. Temporary Storage

The term ROM stands for Read-Only Memory, and it specifically refers to a type of non-volatile memory used in computers and other electronic devices. This means that the data stored in ROM is retained even when the power is turned off, making it essential for storing firmware—the low-level software that initializes and manages hardware components during the booting process. ROM is characterized by its ability to be read but not easily written to or modified under normal operations, which is crucial for maintaining system stability and integrity. This ensures that crucial system instructions remain intact and protected from alterations that could cause malfunctions or security vulnerabilities. Understanding the role of ROM is important for grasping the broader context of computer architecture, as it highlights the differences between permanent and temporary storage solutions, as well as the functionality of different memory types within a computer system.

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8. What can cause standing waves on a transmission cable?

A. Poor termination

B. Excessive cable length

C. High ambient temperature

D. Improper impedance matching

Standing waves on a transmission cable occur when there is a mismatch between the impedance of the cable and the connected load or source. When impedance values are not properly matched, some of the signal reflects back towards the source instead of being fully transmitted. This reflection creates points of constructive and destructive interference along the cable, resulting in standing waves. Poor termination at either end of the transmission line can lead to this impedance mismatch, thus directly causing standing waves. Proper termination is crucial, as it ensures that the signal is absorbed rather than reflected. An improperly terminated cable results in energy being reflected back towards the source, which can create the conditions for standing waves to form. While excessive cable length, high ambient temperatures, and improper impedance matching can have various effects on transmission performance, it is mainly the inadequate termination that leads directly to standing wave generation. In many cases, corrective measures such as using terminators or ensuring that the load impedance matches the characteristic impedance of the cable can alleviate the standing wave issue.

9. What is the effect of using a resistor instead of an inductor in a power supply pi filter?

A. It reduces efficiency

B. It increases voltage

C. All of the above

D. None of the above

Using a resistor instead of an inductor in a power supply pi filter indeed leads to several negative effects, which illustrates why the correct choice is that it reduces efficiency and potentially increases voltage. In a typical power supply pi filter, the inductor is used to smooth out the fluctuations in the rectified voltage. Inductors resist changes in current, thus they help to maintain a steady output voltage by filtering out ripple. When an inductor is replaced with a resistor, the ability to store energy and resist changes in current is lost. As a result, the filter's efficiency decreases because resistors dissipate energy in the form of heat, rather than storing it. This energy loss leads to less effective voltage regulation, which can manifest as an increase in the output voltage ripple. Therefore, the overall efficiency of the power supply is compromised, and the performance is not optimal compared to using an inductor. Thus, using a resistor negatively impacts both efficiency and voltage stability, confirming that selecting an inductor serves critical functions in this application that resistors cannot fulfill effectively.

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10. What causes coaxial cable line losses at RF frequencies?

A. Signal interference

B. Low bandwidth

C. Wire resistance, capacitive and inductive reactance

D. Insulation breakdown

Losses in coaxial cable at radio frequency (RF) are primarily attributed to the combination of wire resistance, capacitive reactance, and inductive reactance. When RF signals travel through a coaxial cable, the conductor (usually copper or aluminum) experiences resistance, which leads to power loss in the form of heat. This is a fundamental concept in electrical engineering where all conductors have some level of resistance, which can be more pronounced at higher frequencies due to skin effect, where the current tends to flow on the surface of the conductor rather than through its entire cross-section. Additionally, capacitive and inductive reactance plays a significant role in signal integrity. At RF frequencies, the capacitance created by the insulation between the inner and outer conductors, along with the inductance of the cable, can create impedance mismatches and reflections. These reactances can lead to attenuation of the signal as well. This interaction of resistance, capacitance, and inductance at RF frequencies is crucial in understanding the overall performance of coaxial cables and helps in designing systems for minimal signal loss. In contrast, signal interference primarily affects the quality of the received signal rather than the inherent line losses due to the physical properties of the cable itself. Low bandwidth,

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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:

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

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