

Avionics Electronics Technician (AET) Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

Copyright © 2026 by Examzify - A Kaluba Technologies Inc. product.

ALL RIGHTS RESERVED.

No part of this book may be reproduced or transferred in any form or by any means, graphic, electronic, or mechanical, including photocopying, recording, web distribution, taping, or by any information storage retrieval system, without the written permission of the author.

Notice: Examzify makes every reasonable effort to obtain accurate, complete, and timely information about this product from reliable sources.

SAMPLE

Table of Contents

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 16

SAMPLE

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

SAMPLE

- 1. In an electrical circuit, what is typically the consequence of having a faulty resistor?**
 - A. Increased current flow**
 - B. Open circuit behavior**
 - C. Short circuit conditions**
 - D. Stable voltage output**

- 2. When inductors are connected in series, how is the total inductance calculated?**
 - A. By taking the average of the inductances**
 - B. The product of the individual inductances**
 - C. The difference of the individual inductances**
 - D. The sum of the individual inductances**

- 3. What does an Inertial Navigation System (INS) primarily utilize for navigation?**
 - A. GPS signals only**
 - B. Magnetic compasses**
 - C. Accelerometers and gyroscopes**
 - D. Radar systems**

- 4. If a voltmeter is placed in a circuit, what is the expected reading given a specific voltage of 7 VDC?**
 - A. 5 VDC**
 - B. 9 VDC**
 - C. 7 VDC**
 - D. 12 VDC**

- 5. What is the primary purpose of an Automatic Direction Finder (ADF)?**
 - A. To enhance engine performance**
 - B. To determine the direction to a grounded radio beacon**
 - C. To provide weather updates**
 - D. To calculate flight path**

- 6. What is typically true about the output when the input (C) is low in a digital logic circuit?**
- A. The output is low**
 - B. The output is high**
 - C. The output fluctuates**
 - D. The output is undefined**
- 7. What does the term 'primary flight display' (PFD) refer to?**
- A. A display that shows engine performance data**
 - B. A display that provides critical navigation maps**
 - C. A display that shows critical flight data such as altitude and airspeed**
 - D. A display for monitoring meteorological conditions**
- 8. What is the characteristic of a diode's forward bias resistance?**
- A. High**
 - B. Low**
 - C. Variable**
 - D. Infinite**
- 9. In avionics, what is 'DME' used for?**
- A. To manage equipment failures**
 - B. To determine the distance between an aircraft and a ground station**
 - C. To provide weather updates**
 - D. To control ground communications**
- 10. What happens to the capacitive reactance of a capacitor as the frequency decreases?**
- A. It decreases**
 - B. It increases**
 - C. It remains constant**
 - D. It becomes zero**

Answers

SAMPLE

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

SAMPLE

Explanations

SAMPLE

1. In an electrical circuit, what is typically the consequence of having a faulty resistor?

- A. Increased current flow**
- B. Open circuit behavior**
- C. Short circuit conditions**
- D. Stable voltage output**

A faulty resistor in an electrical circuit can lead to open circuit behavior, which occurs when the resistor ceases to function properly, resulting in a break in the flow of current. This can happen if the resistor becomes disconnected or if its resistance value changes significantly due to damage. When a resistor fails, it may not allow current to flow at all, similar to a blown fuse, which effectively interrupts the circuit. This disruption affects the entire operation of the circuit, preventing it from functioning as designed. The other options describe scenarios that might create different issues in a circuit; for instance, increased current flow or short circuit conditions generally imply a failure that reduces resistance, which is not what happens with a faulty resistor that becomes open. Lastly, stable voltage output is not achievable when a resistor is faulty because the integrity of the circuit's components directly influences voltage levels.

2. When inductors are connected in series, how is the total inductance calculated?

- A. By taking the average of the inductances**
- B. The product of the individual inductances**
- C. The difference of the individual inductances**
- D. The sum of the individual inductances**

When inductors are connected in series, the total inductance is calculated by summing the individual inductances. This is because, in a series configuration, the magnetic fields of each inductor interact in such a way that they effectively combine their contributions to the overall inductance. Mathematically, this relationship can be expressed as: Total Inductance (L_{total}) = $L_1 + L_2 + L_3 + \dots + L_n$, where $L_1, L_2, L_3, \dots, L_n$ are the inductances of the individual inductors. The total inductance increases with the number of inductors in series because each one adds its own inductive effect, leading to a higher overall inductance than any single inductor alone. This principle is fundamental in designing circuits that require specific inductive properties, ensuring that engineers can create assemblies that meet their specifications for filtering, energy storage, and other applications where inductance plays a crucial role.

3. What does an Inertial Navigation System (INS) primarily utilize for navigation?

- A. GPS signals only**
- B. Magnetic compasses**
- C. Accelerometers and gyroscopes**
- D. Radar systems**

An Inertial Navigation System (INS) primarily utilizes accelerometers and gyroscopes for navigation. These sensors work together to measure the aircraft's acceleration and angular velocity, allowing the system to calculate the position, velocity, and orientation of the vehicle over time. Accelerometers sense changes in velocity by measuring linear acceleration, while gyroscopes detect changes in orientation by measuring rotational movement. This data is integrated over time to create a continuous estimation of the aircraft's trajectory. INS is particularly advantageous in environments where GPS signals are weak or unavailable, such as in tunnels or underwater. It operates independently of external references, ensuring that navigation continues based on the vehicle's internal measurements. The other options, while related to navigation, do not accurately represent the core technology utilized by an INS. For instance, GPS signals provide external position data but do not form the foundational components of an inertial navigation system. Similarly, magnetic compasses offer directional information but are not used in the inertial measurement process. Radar systems, while useful in certain navigation applications, measure distance and speed relative to objects and are not fundamental to the operation of an INS.

4. If a voltmeter is placed in a circuit, what is the expected reading given a specific voltage of 7 VDC?

- A. 5 VDC**
- B. 9 VDC**
- C. 7 VDC**
- D. 12 VDC**

When a voltmeter is connected to a circuit, it measures the electrical potential difference (voltage) across two points in that circuit. If the specified voltage across these two points is indicated as 7 VDC (volts direct current), the voltmeter should ideally read this same value, given that no other factors such as load interference or improper connections affect the measurement. In an ideal scenario, the voltmeter does not draw significant current from the circuit, meaning it does not alter the voltage it is measuring. Therefore, when correctly placed in a circuit with a voltage supply of 7 VDC, the expected reading on the voltmeter would be exactly 7 VDC. This is a fundamental principle in electronics, where the readings obtained should reflect the actual voltage present in the circuit without alteration.

5. What is the primary purpose of an Automatic Direction Finder (ADF)?

- A. To enhance engine performance**
- B. To determine the direction to a grounded radio beacon**
- C. To provide weather updates**
- D. To calculate flight path**

The primary purpose of an Automatic Direction Finder (ADF) is to determine the direction to a grounded radio beacon. ADF systems work by receiving signals emitted from these radio beacons, which are often navigational aids installed at airports or other key locations. The ADF processes the signal and indicates the magnetic bearing to the radio beacon, allowing pilots to navigate effectively. This capability is particularly vital for navigation in areas where visual references are limited, such as over water or in poor weather. ADF helps pilots maintain situational awareness by providing directional information that can guide them to their next waypoint or destination. The other options, such as enhancing engine performance, providing weather updates, or calculating flight paths, do not relate to the core function of an ADF. Enhancing engine performance pertains to systems focused on propulsion, while weather updates are provided by different instruments or systems, such as weather radars or meteorological services. Additionally, calculating flight paths is typically the function of flight management systems or navigation computers, rather than the ADF.

6. What is typically true about the output when the input (C) is low in a digital logic circuit?

- A. The output is low**
- B. The output is high**
- C. The output fluctuates**
- D. The output is undefined**

In a digital logic circuit, when the input (C) is low, the typical behavior of the output is to also be low. This characteristic is fundamental to the operation of many digital logic gates such as NAND, NOR, and NOT gates. For instance, in a NAND gate, if one of the inputs is low, the output will be high unless all inputs are high. Similarly, for a NOT gate, a low input will always produce a high output, and vice versa. However, when focusing specifically on a case where the input is asserted low, this results in a predictable output. This predictable behavior is key in designing and troubleshooting digital circuits, as it allows technicians to understand how signals propagate through various gates and components. Understanding this relationship is crucial when working with logic functions and ensuring that digital systems operate as intended. In contrast, outputs that fluctuate or are defined as high or undefined would indicate atypical behavior or conditions that usually require additional investigation or are specific to certain types of logic functions or failures within a circuit.

7. What does the term 'primary flight display' (PFD) refer to?

- A. A display that shows engine performance data
- B. A display that provides critical navigation maps
- C. A display that shows critical flight data such as altitude and airspeed**
- D. A display for monitoring meteorological conditions

The term 'primary flight display' (PFD) refers specifically to a display that shows critical flight data such as altitude and airspeed. The PFD is a central component in modern aircraft cockpit designs, providing pilots with essential information needed for flight control and navigation. It typically combines information on altitude, airspeed, attitude, heading, and vertical speed into a single visual presentation. This integration allows for better situational awareness, helping pilots to quickly assess the aircraft's performance and make informed decisions. In comparison, displays showing engine performance data or navigation maps serve different purposes, as do displays that monitor meteorological conditions. While these are useful in their own right, they do not encompass the primary focus of the PFD, which is to present the key flight parameters necessary for safe operation of the aircraft. Thus, the correct answer highlights the critical role of the PFD in enabling pilots to monitor and respond to the essential aspects of flight status.

8. What is the characteristic of a diode's forward bias resistance?

- A. High
- B. Low**
- C. Variable
- D. Infinite

The characteristic of a diode's forward bias resistance is low. When a diode is in forward bias, it allows electrical current to flow through it with minimal resistance, which is essential for its function in a circuit. This low resistance enables the diode to effectively conduct current, typically resulting in a voltage drop of approximately 0.7 volts for silicon diodes and about 0.3 volts for germanium diodes. In forward bias, the diode's p-n junction becomes conductive, which facilitates charge carrier movement across the junction and contributes to a low resistance state. This property is crucial in applications where diodes are utilized for tasks such as rectification, signal clipping, or as part of switching circuits. In contrast, other characteristics such as high resistance, variable resistance, or infinite resistance would not accurately represent the operational behavior of a diode in forward bias. A diode exhibiting high resistance would not allow significant current to pass, which contradicts the purpose of conducting current in the forward direction. Similarly, variable resistance or infinite resistance does not reflect the consistent low resistance condition seen during forward bias conduction.

9. In avionics, what is 'DME' used for?

- A. To manage equipment failures
- B. To determine the distance between an aircraft and a ground station**
- C. To provide weather updates
- D. To control ground communications

In avionics, DME stands for Distance Measuring Equipment. It is used primarily to determine the distance between an aircraft and a ground station. This system operates by sending a signal from the aircraft to the DME ground station, which then responds with a signal back to the aircraft. The time taken for this round-trip signal helps calculate the precise distance from the aircraft to the ground station, allowing pilots to navigate more effectively. This function is critical for situational awareness during approaches and landings, as well as in en route navigation. By providing accurate distance information, DME plays a vital role in ensuring safe distances are maintained from navigational aids, contributing to overall flight safety. The other options refer to different functions within aviation that do not specifically pertain to distance measurement. For instance, managing equipment failures relates to maintenance systems, weather updates would involve meteorological services, and ground communications are handled by other communication systems. Therefore, the correct understanding lies in DME's specific role in distance measurement.

10. What happens to the capacitive reactance of a capacitor as the frequency decreases?

- A. It decreases**
- B. It increases
- C. It remains constant
- D. It becomes zero

The capacitive reactance of a capacitor is inversely proportional to the frequency of the signal passing through it. This relationship is defined by the formula: $X_C = \frac{1}{2\pi f C}$ where X_C is the capacitive reactance, f is the frequency, and C is the capacitance. As the frequency f decreases, the denominator of the fraction decreases, which results in an increase in the value of X_C . Therefore, when the frequency decreases, it causes the capacitive reactance to increase, leading to a greater opposition to the alternating current (AC) flowing through the capacitor. This property is crucial in the design and operation of electronic circuits, especially in filtering applications, where the behavior of capacitors at different frequencies directly affects circuit performance.

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://avionicelectronicstech.examzify.com>

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

SAMPLE