

AVIONICS DIVISION BLOCK VI PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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	15

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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 is the radar mile measured in microseconds for RF travel to a target and back?**
 - A. 12.36 microseconds RF to target and back.
 - B. 9.50 microseconds RF to target and back.
 - C. 24.72 microseconds RF to target and back.
 - D. 6.18 microseconds RF to target and back.

- 2. Resistance is measured in which units?**
 - A. Ohms
 - B. Amperes
 - C. Volts
 - D. Watts

- 3. Which neutralizing agents are required for batteries?**
 - A. Sodium Bicarbonate
 - B. Distilled White Vinegar
 - C. Sodium Bicarbonate and Distilled White Vinegar
 - D. Water

- 4. Which quantity is measured in amperes?**
 - A. Current
 - B. Voltage
 - C. Resistance
 - D. Frequency

- 5. What does fault tolerance mean in avionics, and can you provide an example in cockpit displays?**
 - A. Redundancy and error-correction to maintain operation; example: dual redundant displays with cross-checking and failover.
 - B. One backup system is sufficient; no failover.
 - C. It means hardware never fails.
 - D. It is about the speed of data links.

- 6. PDS stands for Protected Distribution System. What does it describe?**
- A. Protected Distribution System – encrypted wire or fiber optic transmission
 - B. Protected Data Storage – encrypted data at rest
 - C. Protected Digital System – cybersecurity operations
 - D. Public Distribution Service – open communications
- 7. In this radar system, which subassembly is directed by the processor to ensure the transmitted reply is radiated from the same antenna?**
- A. RF distribution subassembly routes the chosen video so that the transmitted reply is radiated from the same antenna.
 - B. Antenna
 - C. Transmitter
 - D. Receiver
- 8. Which form is used to document Security Container Information?**
- A. SF 153 - COMSEC Destruction Record
 - B. SF 700 - Security Container Information
 - C. SF 702 - Security Container Check Sheet
 - D. SF 710 - Unclassified Label
- 9. Which component is NOT typically tested on the AECTS?**
- A. Generators
 - B. Generator drive systems
 - C. Hydraulic pumps
 - D. Engine driven accessories
- 10. Which items are included in the PPE for battery handling?**
- A. Apron
 - B. Goggles
 - C. Gloves
 - D. All of the above

Answers

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

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Explanations

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1. What is the radar mile measured in microseconds for RF travel to a target and back?

- A. 12.36 microseconds RF to target and back.**
- B. 9.50 microseconds RF to target and back.
- C. 24.72 microseconds RF to target and back.
- D. 6.18 microseconds RF to target and back.

A radar mile is defined as the distance light travels in one microsecond, with the standard value of 6,080 feet for one-way. Since the radar signal must go to the target and back, the round-trip distance is twice that: 12,160 feet. Convert to meters and compute the travel time: $12,160 \text{ ft} \times 0.3048 \text{ m/ft} \approx 3,707 \text{ m}$. $\text{Time} = \text{distance} / \text{speed of light} \approx 3,707 \text{ m} / 299,792,458 \text{ m/s} \approx 12.36 \text{ microseconds}$. So the RF travel to a target and back for a radar mile is about 12.36 microseconds.

2. Resistance is measured in which units?

- A. Ohms**
- B. Amperes
- C. Volts
- D. Watts

Electrical resistance is quantified in ohms, symbolized by the Greek letter omega (Ω). This unit is defined such 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. In other words, resistance relates voltage to current via $V = I \times R$, so $R = V/I$. The other common electrical units represent different quantities: amperes measure current, volts measure voltage, and watts measure power.

3. Which neutralizing agents are required for batteries?

- A. Sodium Bicarbonate
- B. Distilled White Vinegar
- C. Sodium Bicarbonate and Distilled White Vinegar**
- D. Water

Neutralizing battery electrolyte spills requires options that cover both acidic and alkaline chemistries. Some batteries use sulfuric acid as the electrolyte, which is acidic, so a base like sodium bicarbonate readily neutralizes it, producing salt, water, and carbon dioxide. Other batteries use alkaline electrolytes such as potassium hydroxide, which is a strong base; acetic acid in distilled white vinegar neutralizes that base to form potassium acetate and water. Since you can encounter either type of spill, having both sodium bicarbonate and distilled white vinegar available ensures you can neutralize regardless of the battery chemistry. Water alone won't neutralize the spill—it just dilutes and can spread the corrosive material, so it isn't sufficient by itself.

4. Which quantity is measured in amperes?

- A. Current**
- B. Voltage
- C. Resistance
- D. Frequency

Current is the rate at which electric charge flows through a conductor. Amperes quantify that rate—one ampere equals one coulomb of charge passing a point each second. This is why current is measured in amperes. The other quantities are separate: voltage is the electrical potential difference (volts), resistance is how much a material opposes current (ohms), and frequency is how often a repeating event occurs per second (hertz).

5. What does fault tolerance mean in avionics, and can you provide an example in cockpit displays?

- A. Redundancy and error-correction to maintain operation; example: dual redundant displays with cross-checking and failover.**
- B. One backup system is sufficient; no failover.
- C. It means hardware never fails.
- D. It is about the speed of data links.

Fault tolerance in avionics means the system can keep operating safely even if part of it fails, using redundancy, error detection, and safe degradation. In practice this means having multiple independent paths or components that can take over, along with mechanisms to detect and correct errors and to switch to a backup without confusing the crew. For cockpit displays, that translates to two independent displays showing the same critical data, each fed by separate data paths and often separate power sources. The displays monitor each other and the system can automatically switch to the backup if a fault is detected, preserving visibility of essential information. An example is dual redundant primary flight displays with cross-checking and failover: if one path or display develops a fault, the other keeps presenting accurate data and a seamless handover occurs, so the crew isn't left without the information they need. This approach minimizes the chance that a single fault can lead to loss of situational awareness.

6. PDS stands for Protected Distribution System. What does it describe?

- A. Protected Distribution System – encrypted wire or fiber optic transmission**
- B. Protected Data Storage – encrypted data at rest
- C. Protected Digital System – cybersecurity operations
- D. Public Distribution Service – open communications

Protected Distribution System describes a secure, dedicated path for transmitting sensitive information over wired or fiber optic links. The emphasis is on keeping data protected while it travels between locations, achieved by a combination of physical protection of the transmission medium and encryption of the signals. This way, even if the line is accessed, the information remains unread and unaltered. It's about secure in-transit protection, not about data at rest or general cybersecurity operations, and not about open or public communications.

7. In this radar system, which subassembly is directed by the processor to ensure the transmitted reply is radiated from the same antenna?

A. RF distribution subassembly routes the chosen video so that the transmitted reply is radiated from the same antenna.

B. Antenna

C. Transmitter

D. Receiver

The key idea is how the radar routes signals so the same antenna handles both transmitting and receiving. The processor directs the RF distribution subassembly to take the selected transmit video and connect it to the antenna, and to manage the path so the received signals come back through the same antenna. This subassembly acts as the switchyard for RF paths, ensuring the transmit energy leaves via the same antenna that will receive the echoes, by coordinating the routing and duplexing between transmitter, receiver, and antenna. The antenna itself is just the radiating element, not the path controller. The transmitter creates the RF signal, but it's the RF distribution subassembly that routes that signal to the antenna. The receiver processes signals after they come from the antenna, but it doesn't control which antenna is used for transmission.

8. Which form is used to document Security Container Information?

A. SF 153 - COMSEC Destruction Record

B. SF 700 - Security Container Information

C. SF 702 - Security Container Check Sheet

D. SF 710 - Unclassified Label

SF 700 is the form used to document Security Container Information. It records the fundamental details of a secure container—its designation, location, the organization responsible for it, the level of protection, and the authorized custodian. This form serves as the official record of where the container is and who has access, and it is updated whenever the container's status or custody changes. It's distinct from other forms: SF 153 is for recording COMSEC material destruction, SF 702 is the daily or shift check sheet used to verify the container's security status during access, and SF 710 is the label used on items to indicate unclassified status. So, for documenting where a security container is and who can access it, SF 700 is the right form.

9. Which component is NOT typically tested on the AECTS?

A. Generators

B. Generator drive systems

C. Hydraulic pumps

D. Engine driven accessories

AECTS focuses on electrical power generation, drive, and the electrical system's accessories. It's used to verify that the generator, its drive gear, and engine-driven accessories that interact with the electrical system function correctly, providing proper voltage, frequency, and control. Hydraulic pumps are part of the hydraulic system, not the electrical system, so they're tested with hydraulic test equipment rather than through the electrical test station. Therefore, they're not typically included in AECTS testing. If a hydraulic pump is mounted on the engine's accessory drive, it may be driven by that system, but its testing belongs to the hydraulic side, not the electrical test setup.

10. Which items are included in the PPE for battery handling?

- A. Apron
- B. Goggles
- C. Gloves
- D. All of the above**

When handling batteries, protection must cover eyes, skin, and clothing because acids or electrolytes can splash and cause burns or injuries. An apron helps shield the torso and clothing from spills, reducing skin contact and staining. Goggles protect the eyes from splashes that could cause severe chemical burns. Gloves safeguard the hands from direct contact with corrosive liquids and from burns. Because each item guards a different exposure path, using all of them together provides the broadest, safest protection. In some setups, a face shield might be added for extra protection, but goggles plus gloves and an apron are commonly used as the minimum ensemble. This is why all of the above is the best choice.

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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://avionicsdivisionblock6.examzify.com>

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

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