Avionics Division Block VI Practice Test (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

1. Which RADAR subsystem generates and radiates the RF carrier?

A. Generates and amplifies the RF carrier, modulates with intelligence, and radiates the signal.

B. Receives RF energy and converts it to video.

C. Directs the antenna toward targets and tracks them.

D. Processes video signals for display.

2. Thermal Runaway is defined as which condition?

A. Overcharge condition

B. Rise in battery temperature 100 degrees F and up

C. Rise in charging current

D. Decrease in voltage

3. Voltage is defined as:

A. Electrical force or potential difference in volts

B. Current measured in volts

C. Resistance measured in volts

D. Frequency measured in volts

4. How does a fuse operate in a circuit?

A. They melt their internal element/wire before the rest of the system is affected

B. They interrupt circuit. Can be used multiple times, reliable and tamper proof

C. They store charge

D. They regulate voltage

5. How does RADAR work?

A. Detects presence of an object and determines direction, altitude and range by reflected electromagnetic energy

B. Uses sound waves to measure distance

C. Requires visible light

D. Detects only metal objects

6. Two Person Integrity (TPI) requires what arrangement for handling Top Secret COMSEC?

A. To allow single person access

B. To require two persons in view to handle and store Top Secret COMSEC

C. To enforce annual background checks

D. To require dual-key encryption

7. What is the Aircraft Engine Component Test Stand (AECTS) used for?

A. Provides capability of dynamic testing of aircraft engine driven accessories such as generators and generator drive systems.

B. Tests only engine cores.

C. Is used for battery testing.

D. Is used for radar alignment.

8. Which quantity is measured in amperes?

A. Current

B. Voltage

C. Resistance

D. Frequency

9. What is the purpose of the RADAR Processor?

A. Unit that decides which is the stronger video that is indicated to the RF distribution subassembly so that it may cause the transmitted reply to be radiated from the same antenna.

B. Filters noise from received signals.

C. Amplifies the RF carrier for transmission.

D. Displays target video on a monitor.

10. Which equipment is used to view tiny components during 2M repair?

A. Microscope

B. Oven

C. Shadowboxed drawers

D. Fiber optic lights

Answers

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

Explanations

1. Which RADAR subsystem generates and radiates the RF carrier?

A. Generates and amplifies the RF carrier, modulates with intelligence, and radiates the signal.

B. Receives RF energy and converts it to video.

C. Directs the antenna toward targets and tracks them.

D. Processes video signals for display.

The function being tested is the transmitter. It is the subsystem that creates the RF carrier, amplifies it to the required power, modulates it with the radar signal (such as pulsed envelopes or coded waveforms), and radiates it through the antenna. This is why it's the correct choice: generation and emission of the carrier are the transmitter's core duties. The other subsystems do not generate the carrier. The receiver handles capturing returned energy and converting it to a video signal for processing. The antenna system (often part of a separate tracking or pointing unit) directs the antenna to scan and track targets. The radar processor handles converting received video into display formats.

2. Thermal Runaway is defined as which condition?

A. Overcharge condition

B. Rise in battery temperature 100 degrees F and up

C. Rise in charging current

D. Decrease in voltage

Thermal runaway is a self-accelerating condition in a battery where the heat generated inside cannot be removed fast enough, causing the temperature to rise and reactions to feed more heat. In the context of this material, it is defined as an overcharge condition—charging the cell beyond its limit creates exothermic reactions and gas buildup that can drive that uncontrolled heat increase. A rise in temperature can happen, but it's a symptom of the runaway process, not the defining trigger. A rise in charging current or a decrease in voltage aren't the defining characteristics; they may occur alongside the event but don't define it.

3. Voltage is defined as:

A. Electrical force or potential difference in volts

B. Current measured in volts

C. Resistance measured in volts

D. Frequency measured in volts

Voltage is the electrical potential difference that pushes charge and drives current, and it is measured in volts. The correct description captures this electrical force as a potential difference expressed in volts. Think of voltage like water pressure: it's the pressure difference that pushes water through a pipe. In electrical terms, higher voltage means a greater push on charges to move through a conductor. Current, by contrast, is the amount of charge flowing per unit time and is measured in amperes; resistance is the opposition to that flow and is measured in ohms; frequency is how often a repeating event occurs and is measured in hertz.

4. How does a fuse operate in a circuit?

A. They melt their internal element/wire before the rest of the system is affected

B. They interrupt circuit. Can be used multiple times, reliable and tamper proof

C. They store charge

D. They regulate voltage

A fuse protects a circuit by acting as a sacrificial current limiter. It contains a thin metal element that carries the normal current, but when an overcurrent occurs, the heat generated (proportional to I^2R) causes the element to melt open. Once it melts, the circuit is broken, preventing excessive current from reaching wires and components and causing damage. This is typically a single-use protection device—traditional fuses must be replaced after they have opened. They do not store charge, regulate voltage, or provide multiple trips; those roles are handled by capacitors, voltage regulators, or resettable fuses in other contexts.

5. How does RADAR work?

A. Detects presence of an object and determines direction, altitude and range by reflected electromagnetic energy

B. Uses sound waves to measure distance

C. Requires visible light

D. Detects only metal objects

Radar works by emitting pulses of radio energy and listening for echoes. When those pulses encounter an object, part of the energy is reflected back to the radar receiver, and the time between transmission and reception tells you how far away the object is (range). The direction to the object comes from where the radar's antenna beam is pointed or how it is scanned, giving you the bearing or azimuth. Altitude can be inferred from the elevation angle of the beam and the geometry, or from additional height-measuring radar systems. The key idea is detecting presence and geometry solely from the reflected electromagnetic energy. This differs from using sound waves (sonar), from relying on visible light, or from the notion that radar only detects metal objects, since radar can detect many materials and shapes that reflect energy.

6. Two Person Integrity (TPI) requires what arrangement for handling Top Secret COMSEC?

A. To allow single person access

B. To require two persons in view to handle and store Top Secret COMSEC

C. To enforce annual background checks

D. To require dual-key encryption

Two Person Integrity means top-secret COMSEC materials are never accessed or stored by a single individual. The handling and storage must involve two authorized personnel who are in view of each other while performing the task. This provides dual control and dual custody, enabling cross-checking, preventing covert copying, and maintaining a verifiable chain of custody. While background checks and other safeguards are important, they don't define the TPI arrangement, and dual-key encryption relates to cryptographic protection rather than the physical handling setup.

7. What is the Aircraft Engine Component Test Stand (AECTS) used for?

A. Provides capability of dynamic testing of aircraft engine driven accessories such as generators and generator drive systems.

B. Tests only engine cores.

C. Is used for battery testing.

D. Is used for radar alignment.

The Aircraft Engine Component Test Stand is built to test engine-driven accessories under real operating conditions. It provides the ability to drive those accessories—like the generator and its drive system—at varying engine speeds and loads so you can verify how they perform, respond to changes in demand, and stay reliable when the engine is running. This focus on dynamic, simulated operation distinguishes it from tests that look only at the engine core, or unrelated tasks like battery testing or radar alignment.

8. 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).

9. What is the purpose of the RADAR Processor?

A. Unit that decides which is the stronger video that is indicated to the RF distribution subassembly so that it may cause the transmitted reply to be radiated from the same antenna.

B. Filters noise from received signals.

C. Amplifies the RF carrier for transmission.

D. Displays target video on a monitor.

The radar processor's job is to choose the best, strongest video signal from the radar's inputs and feed that decision to the RF distribution path so the transmitter uses the same antenna for both transmit and receive. By selecting the strongest video, it ensures the most reliable target information is sent through the system and that the radar's duplex path remains coherent, keeping the transmit and receive paths aligned on the same antenna. This function isn't about filtering noise, which happens in the receiver front end, nor about amplifying the RF carrier, which is a transmitter task, and it isn't primarily about displaying video, which is a display/vision function—though the processor's selected video can be used for display as well.

10. Which equipment is used to view tiny components during 2M repair?

A. Microscope

B. Oven

C. Shadowboxed drawers

D. Fiber optic lights

Viewing tiny components requires magnification and precise visual detail. A microscope provides true magnification with depth perception, letting you scrutinize micro-solder joints, IC leads, pins, and fine traces for hairline cracks, bridging, corrosion, or contamination. With proper lighting and adjustable focus, it reveals defects that are invisible to the naked eye, which is essential during 2M repair to ensure components are properly seated and joints are clean and reliable. An oven isn't for inspection—it's used for heating or curing during rework. Shadowboxed drawers are a lighting/organizational setup to help view items under certain lighting conditions but don't magnify. Fiber optic lights improve illumination, but without magnification you still miss tiny details. The microscope is the key tool for viewing those tiny components.

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!