Advanced Avionics 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 GPWS mode is associated with Altitude loss after Takeoff or Go-Around?**

   A. Mode 3

   B. Mode 1

   C. Mode 2

   D. Mode 4

2. **Weather radar should be set to an appropriate range to give yourself an approximate how many minute decision window?**

   A. 10 minutes

   B. 20 minutes

   C. 30 minutes

   D. 40 minutes

3. **If you are flying a magnetic heading of 090° and your fixed card ADF reads 165°, what heading would your RMI point to?**

   A. 075

   B. 045

   C. 345

   D. 255

4. **Which statement is correct for CAT 1 limits?**

   A. 1200/600 RVR, 200' DA

   B. No restrictions

   C. 1200 RVR

   D. MDA, DH or DA

5. **For non-precision approaches, which option aligns with the guideline?**

   A. Use all automation until landing.

   B. Use only that level of automation that assists in tracking, descent management and speed control.

   C. Fly manual throughout.

   D. Enable autopilot only for lateral guidance.

6. Which sequence correctly represents the order of weather radar reflections from most reflective to least reflective?

A. Wet Hail, Rain, Ice Crystals, Wet Snow, Dry Hail, Dry Snow

B. Wet Snow, Dry Snow, Wet Hail, Rain

C. Rain, Wet Hail, Ice Crystals, Dry Snow

D. Ice Crystals, Rain, Wet Snow, Dry Hail, Dry Snow

7. In departure from busy airports, which option best describes the automation approach?

A. Use partial automation only after takeoff clearance.

B. Rely on ATC without automation.

C. Use all automation as soon as possible to allow more time for lookout and ATC clearances and instructions.

D. Turn automation off during climb.

8. What is the orbital altitude of GPS satellites in kilometers?

A. 20200

B. 12200

C. 20000

D. 20250

9. New Black Boxes must be capable of at least how many hours of data?

A. 1 hour

B. 2 hours

C. 4 hours

D. 8 hours

10. Which of the following is an incorrect description of CFIT?

A. CFIT only occurs with pilots at lower level of experience

B. CFIT usually occurs near an airport

C. CFIT usually involves impact with significantly raised terrain

D. CFIT often occurs in conditions of cloud or reduced visibility

Answers

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

Explanations

1. Which GPWS mode is associated with Altitude loss after Takeoff or Go-Around?

A. Mode 3

B. Mode 1

C. Mode 2

D. Mode 4

This GPWS mode is aimed at the takeoff and go-around phase, where you should be establishing a positive climb. It watches the airplane's altitude after liftoff or after you initiate a go-around, and if the aircraft shows an altitude loss or fails to gain height as expected, a warning is issued. This targeted monitoring helps ensure you don't end up in a descent during a critical phase when you should be climbing away from the ground. In practice, you'll get alerted specifically when altitude is lost after takeoff or during a go-around, which distinguishes this mode from warnings about excessive descent rates on approach or terrain proximity alerts during other phases. The focus is on confirming a successful climb after liftoff rather than on descent behavior or terrain closeness during other flight phases.

2. Weather radar should be set to an appropriate range to give yourself an approximate how many minute decision window?

A. 10 minutes

B. 20 minutes

C. 30 minutes

D. 40 minutes

The key idea is to ensure you have a practical look-ahead time to observe weather and decide how to avoid it. Weather radar range determines how far ahead you can see precipitation and developing cells. If you set it too close, you'll see storms clearly only when they're already near, leaving little time to react. If you push the range too far, the echoes become fuzzier and movement harder to judge, so you might misread how fast a storm is approaching. Aiming for about a 20-minute decision window gives a solid balance: you can watch how a cell evolves, estimate its trajectory, and have enough time to maneuver—change course, adjust altitude, or re-route—before you're in its path. This lead time is enough to plan safely without sacrificing too much image clarity or clutter on the display. That's why about 20 minutes is the recommended window.

3. If you are flying a magnetic heading of 090° and your fixed card ADF reads 165°, what heading would your RMI point to?

A. 075

B. 045

C. 345

D. 255

The bearing shown on the RMI is derived by relating your current magnetic heading to the bearing to the NDB shown on the ADF. In this setup, you combine the two values to get the direction the RMI would indicate you should head. With a magnetic heading of 090 and the ADF reading of 165, you add them: 090 + 165 = 255. So the RMI would point to 255 degrees. In practice, wind and the "to/from" configuration can affect actual flight path, but the instrument's indication under these inputs reflects the sum of heading and the ADF bearing, giving 255.

4. Which statement is correct for CAT 1 limits?

A. 1200/600 RVR, 200' DA

B. No restrictions

C. 1200 RVR

D. MDA, DH or DA

CAT I minima are defined by a precise decision altitude and required runway visual range. For a CAT I approach you descend to a fixed DA and must have the published RVR values met to continue below that point. A common CAT I set of minimums is an RVR of 1200 meters for the touchdown zone and 600 meters along the centerline, with a decision altitude of 200 feet. This combination shows both the visibility requirement and the altitude at which you may decide to land, which is why it's the best representation of CAT I limits. The other options miss one of these elements or mix in non-CAT I concepts (like MDA, which is used for non-precision approaches).

5. For non-precision approaches, which option aligns with the guideline?

A. Use all automation until landing.

B. Use only that level of automation that assists in tracking, descent management and speed control.

C. Fly manual throughout.

D. Enable autopilot only for lateral guidance.

On non-precision approaches, you don't have vertical guidance, so staying on the published path means you must actively manage descent and speed, with automation providing support rather than taking over the entire approach. The best choice is to use only the level of automation that assists in tracking the lateral path, controlling the descent profile, and keeping speed within limits. This helps you maintain situational awareness and accuracy on the approach while still allowing you to intervene if needed. Fully automating until you land can reduce your monitoring and risk missing altitude steps or constraints. Flying manual throughout ignores helpful automation that can reduce workload and improve precision. Relying only on lateral guidance ignores the crucial descent and speed management aspects of a non-precision approach.

6. Which sequence correctly represents the order of weather radar reflections from most reflective to least reflective?

A. Wet Hail, Rain, Ice Crystals, Wet Snow, Dry Hail, Dry Snow

B. Wet Snow, Dry Snow, Wet Hail, Rain

C. Rain, Wet Hail, Ice Crystals, Dry Snow

D. Ice Crystals, Rain, Wet Snow, Dry Hail, Dry Snow

Radar reflectivity rises with particle size and, crucially, with liquid water content. Wet hail carries liquid water, which greatly increases the dielectric contrast with air, making it a very strong reflector and placing it at the top. Large raindrops also produce strong echoes, but typically not as high as a water-coated hail particle. Ice crystals are solid ice with less water content and often smaller effective scattering cross sections, so they reflect less than hail or rain. Wet snow has more liquid water than dry snow, boosting its reflectivity but not to the level of the preceding categories. Dry hail, being ice with little liquid water, reflects more than dry snow but less than wet snow. Dry snow consists of small, fluffy crystals with minimal water, giving the weakest echoes. This sequence follows the influence of water content and particle size on radar reflectivity, ranking the reflections from most to least reflective as wet hail, rain, ice crystals, wet snow, dry hail, and dry snow.

7. In departure from busy airports, which option best describes the automation approach?

A. Use partial automation only after takeoff clearance.

B. Rely on ATC without automation.

C. Use all automation as soon as possible to allow more time for lookout and ATC clearances and instructions.

D. Turn automation off during climb.

In busy departures, using automation early helps manage the flight path and reduce pilot workload, freeing you to focus on lookout and listening to ATC. Engaging all automation as soon as feasible allows the aircraft to maintain a stable climb profile, accurate speed, and precise navigation automatically, which keeps you aligned with ATC clearances and altitude constraints. With the automation handling the routine control tasks, you have more mental bandwidth to monitor traffic hotspots, cross-check indications, and respond promptly to instructions, improving overall safety and efficiency. This approach doesn't replace vigilance or manual intervention when needed; you still monitor flight progress and can take control if necessary. Delaying automation until after takeoff clearance raises workload during the climb and can compromise situational awareness in a busy airspace. Relying solely on ATC without automation isn't practical either, as automation supports the pilot in managing the aircraft within clearances. Turning automation off during climb defeats its purpose of reducing workload and maintaining consistent flight path in a congested environment.

8. What is the orbital altitude of GPS satellites in kilometers?

A. 20200

B. 12200

C. 20000

D. 20250

GPS satellites are placed in a medium Earth orbit about 20,200 kilometers above the Earth's surface. That specific altitude is chosen because it produces a 12-hour orbital period and a favorable geometry for global coverage, giving receivers a reliable four-satellite geometry for accurate positioning. On exams, the standard cited altitude is about 20,200 kilometers, which is why this figure is selected. The other numbers don't match the well-established GPS altitude and would change the orbit's period and coverage characteristics.

9. New Black Boxes must be capable of at least how many hours of data?

A. 1 hour

B. 2 hours

C. 4 hours

D. 8 hours

Two hours is the minimum requirement for what new black boxes must be able to record. This primarily refers to the cockpit voice recorder's capability to store at least 120 minutes of cockpit audio, giving investigators a longer window to understand the events on the flight deck after an incident. In the past, CVRs often recorded only about 30 minutes, which could hinder investigations. Flight data recorders, on the other hand, typically store many more hours of parameter data, but the standard minimum for the recording duration here is two hours. The other durations are either outdated (one hour) or simply exceed what is required by the minimum.

10. Which of the following is an incorrect description of CFIT?

A. CFIT only occurs with pilots at lower level of experience

B. CFIT usually occurs near an airport

C. CFIT usually involves impact with significantly raised terrain

D. CFIT often occurs in conditions of cloud or reduced visibility

CFIT describes a situation where an airworthy aircraft under pilot control is unintentionally flown into terrain, water, or obstacles. The statement that CFIT only occurs with pilots at a lower level of experience is not true. CFIT can happen to pilots with any experience level; even seasoned crews have fallen victim to disorientation, misreading instruments, or misjudging terrain in instrument meteorological conditions. Experience reduces risk, but it does not guarantee immunity from CFIT. The other descriptions fit common patterns of CFIT. It often happens near an airport during approach or departure when terrain or obstacles lie close to the flight path. It typically involves colliding with terrain that is higher than the aircraft's current altitude, such as rising terrain or mountains. And it frequently occurs in conditions of cloud or reduced visibility, where pilots don't have a clear view of the surrounding terrain and must rely on instruments.

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://advavionics.examzify.com

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