VT-IV Navigation Familiarization Exam II Practice (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. Regarding altitude information, which statement is true?

A. INS does not provide altitude information; GPS does.

B. GPS does not provide altitude information.

C. Both provide identical altitude information.

D. Altitude is not used by either system.

2. Which combination of data sources is used by the FMS to provide positions for drift checks?

A. FMS only

B. GPS and INS

C. FMS, GPS, and INS

D. FMS and GPS

3. If the accelerometer is stationary or traveling at a constant velocity, what happens?

A. There is acceleration and output

B. There is no acceleration and no output

C. Output becomes zero

D. Output becomes unstable

4. What must be monitored in an INS?

A. Fuel level

B. Excessive drift

C. Antenna alignment

D. Crew workload

5. Which statement about the INS is false?

A. It is self-contained

B. It can be jammed

C. It is non-radiating

D. It requires no ground-based or airborne support

6. GPS provides navigation information of which dimensionality?

A. Two-dimensional only

B. Three-dimensional

C. Four-dimensional

D. One-dimensional

7. Which operations require keyed PPS receivers according to CNAF M-3710.7?

A. Civil airspace navigation operations only

B. Combat, combat support, and combat service support operations

C. Training flights

D. Research flights

8. The two large radio categories are ?

A. VHF and UHF are short-range, LOS radios

B. The short range, line of sight (LOS) radios, and long range, over the horizon (OTH) systems

C. HF and SATCOM are short range

D. LOS and OTH are two categories of radios

9. Most EFIS/EHSI instruments can be set to display which data?

A. Ground-based NAVAID data only

B. FMS data only

C. Ground-based NAVAID data, FMS data, or a combination of both

D. Weather radar data only

10. What is the safety concern for HF transmissions due to higher power output?

A. It lowers power output automatically

B. It can overheat and requires monitoring

C. It cannot overheat

D. It reduces receiver sensitivity

Answers

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

Explanations

1. Regarding altitude information, which statement is true?

A. INS does not provide altitude information; GPS does.

B. GPS does not provide altitude information.

C. Both provide identical altitude information.

D. Altitude is not used by either system.

Altitude data comes from how the two systems compute position. GPS provides a full three-dimensional position, which includes a vertical component (height above mean sea level or the ellipsoid) as part of its fix. Inertial navigation, on the other hand, estimates position by integrating accelerations over time. The vertical estimate from this integration tends to drift because small biases in the accelerometers accumulate, making the altitude reading unreliable without external updates. Because of that drift, the INS by itself isn't considered a reliable source of altitude, while GPS does provide altitude information. When both are used together, GPS updates help keep the INS's altitude accurate.

2. Which combination of data sources is used by the FMS to provide positions for drift checks?

A. FMS only

B. GPS and INS

C. FMS, GPS, and INS

D. FMS and GPS

Drift checks rely on cross-checking multiple independent position sources to verify the aircraft's actual location and catch navigator errors. The FMS maintains a position estimate from its navigation data, GPS provides an accurate external position reference, and the INS offers continuous dead-reckoning position from inertial sensors. By using all three, the system can quickly detect discrepancies among them—any drift in the INS, GPS anomalies, or inconsistencies in the FMS data show up as a mismatch. This three-way combination gives the most reliable validation of position for drift checks, so the correct approach uses the FMS, GPS, and INS.

3. If the accelerometer is stationary or traveling at a constant velocity, what happens?

A. There is acceleration and output

B. There is no acceleration and no output

C. Output becomes zero

D. Output becomes unstable

The accelerometer responds to changes in velocity, i.e., to acceleration. If the platform is stationary or moving at a constant speed, there is no change in velocity, so the acceleration is zero. Therefore, in an ideal case, the dynamic output of the accelerometer is zero. In real systems, gravity can introduce a constant bias, but the meaningful dynamic output (the part that tracks changes in motion) remains zero in this situation.

4. What must be monitored in an INS?

A. Fuel level

B. Excessive drift

C. Antenna alignment

D. Crew workload

An Inertial Navigation System relies on integrating accelerometer and gyroscope data to track position, velocity, and attitude. Small biases and noise in these sensors cause errors to build up over time, so the reported navigation solution gradually drifts away from the true values. Monitoring for excessive drift helps you know when the INS is losing accuracy and needs reinitialization, alignment, or updating from an external reference (like GPS) to reset the error. The other options don't reflect the INS's internal error behavior: fuel level isn't about navigation accuracy, antenna alignment isn't a core INS concern, and crew workload doesn't affect the inertial data.

5. Which statement about the INS is false?

A. It is self-contained

B. It can be jammed

C. It is non-radiating

D. It requires no ground-based or airborne support

An inertial navigation system operates purely from internal sensors—gyroscopes and accelerometers—so it calculates motion, position, and attitude without relying on external signals. Because it does not emit radio waves or rely on ground-based or airborne navigation aids, it is self-contained and non-radiating, and it can run without any outside support. The trade-off is that small sensor biases and misalignments cause drift over time, so accuracy degrades unless updated or re-aligned periodically. Since there are no signals to intercept or jam, there's nothing an external jammer can disrupt in the INS itself. Therefore, saying it can be jammed is false.

6. GPS provides navigation information of which dimensionality?

A. Two-dimensional only

B. Three-dimensional

C. Four-dimensional

D. One-dimensional

GPS provides position in three spatial dimensions: latitude, longitude, and altitude. The receiver uses distance measurements to at least four satellites to solve for x, y, and z coordinates, while also estimating the receiver's clock error. Time is essential to the calculations, but the user-facing navigation information is a three-dimensional position. So the dimensionality is three-dimensional.

7. Which operations require keyed PPS receivers according to CNAF M-3710.7?

A. Civil airspace navigation operations only

B. Combat, combat support, and combat service support operations

C. Training flights

D. Research flights

Keyed PPS receivers are used to authenticate GPS signals, giving trusted position data in environments where the GPS signal might be contested or spoofed. CNAF M-3710.7 specifies that this level of protection is required for missions where navigation integrity is critical due to potential enemy interference. Combat, combat support, and combat service support operations fall into that category, since they can occur in hostile or denied environments and rely on accurate, protected navigation to complete the mission safely. Civil airspace navigation, training flights, and research flights are typically conducted in lower-threat settings and do not mandate keyed PPS receivers, so they are not required to use this secure navigation capability.

8. The two large radio categories are ?

A. VHF and UHF are short-range, LOS radios

B. The short range, line of sight (LOS) radios, and long range, over the horizon (OTH) systems

C. HF and SATCOM are short range

D. LOS and OTH are two categories of radios

The main idea here is that radios are grouped by how far their signals can travel: short-range, line-of-sight systems and long-range, over-the-horizon systems. Short-range LOS radios rely on a direct, unobstructed path between transmitter and receiver; the distance you can cover depends on antenna height and terrain, and they usually use VHF/UHF frequencies. Long-range OTH systems reach beyond the visible horizon by using propagation methods such as ionospheric reflection (HF) or satellite relays, enabling world-wide or global communications. This makes the description that combines the two categories—short-range, line-of-sight radios and long-range, over-the-horizon systems—the best fit. Other options mix up frequency bands or propagation methods and don't capture the fundamental distinction in how far the signals can travel.

9. Most EFIS/EHSI instruments can be set to display which data?

A. Ground-based NAVAID data only

B. FMS data only

C. Ground-based NAVAID data, FMS data, or a combination of both

D. Weather radar data only

EFIS/EHSI displays navigation information from multiple sources to give you a complete view of where you are and where you're going. It can show ground-based NAVAID data such as VORs, VOR/DME, and ILS/localizer information, which helps you navigate using external radio aids. It can also display data from the FMS, like your active flight plan, next waypoint, leg distance, ETA, and altitude constraints. Most systems let you mix these sources on the display, showing both the external nav aids and the flight plan together for better situational awareness. Weather radar data, while available on some setups, isn't universally included on the EFIS/EHSI by default, so the standard capability is to show NAVAID data, FMS data, or a combination of both.

10. What is the safety concern for HF transmissions due to higher power output?

A. It lowers power output automatically

B. It can overheat and requires monitoring

C. It cannot overheat

D. It reduces receiver sensitivity

When you increase HF transmitter power, more energy ends up as heat in the equipment, cables, and antenna system. The safety concern is that this heat can cause components to overheat, which can damage insulation, degrade performance, or even ignite a fire. Because of this, higher power levels must be accompanied by proper cooling, ventilation, temperature monitoring, and adherence to safe operating limits. Additionally, higher power raises RF exposure risks to people nearby, so maintaining safe distances and following safety guidelines is essential.

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://vtivnavfam2.examzify.com

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