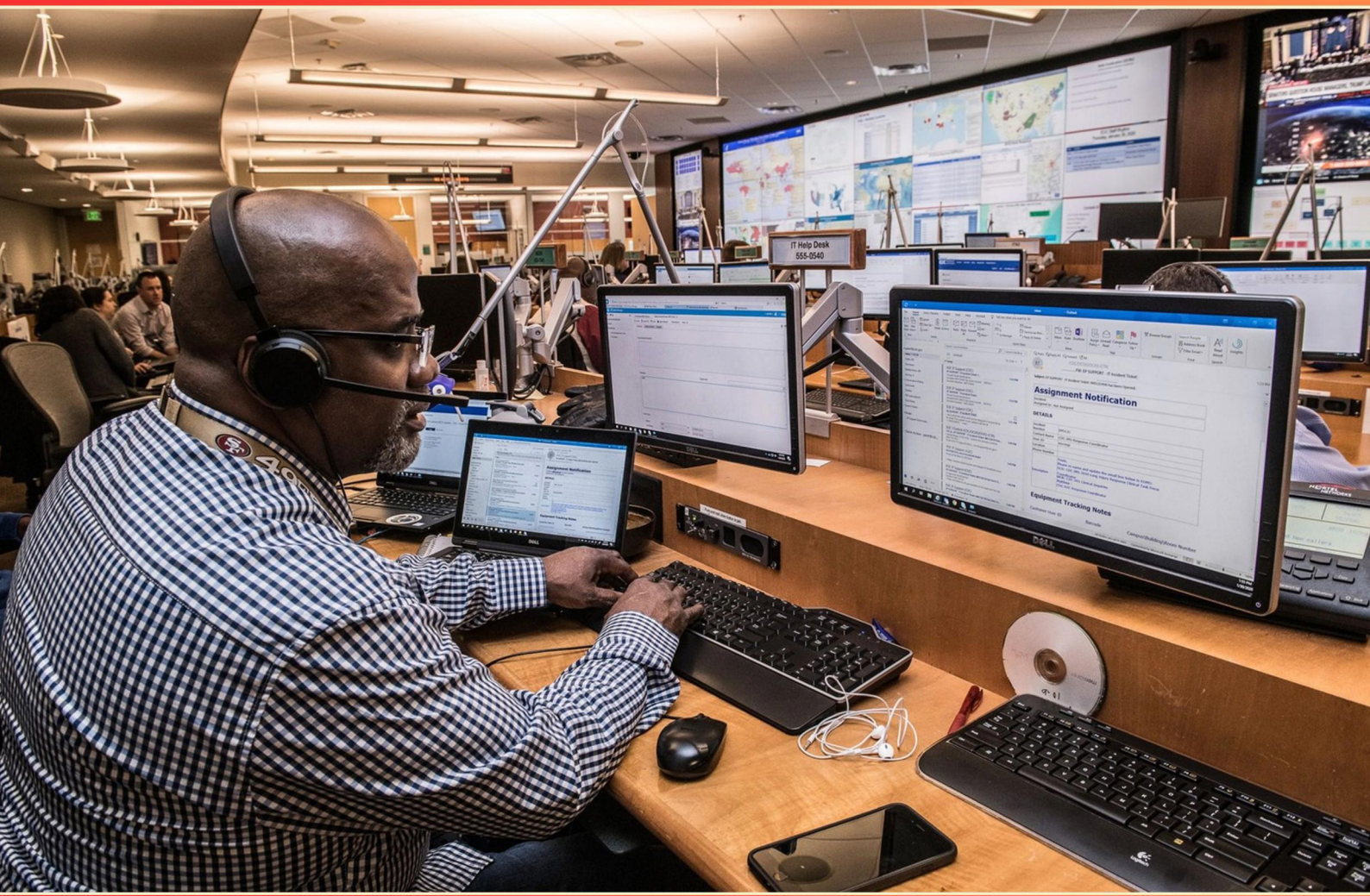
O-STRAND MISSION COMPUTERS PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. What does an Electronic Altimeter Receiver-Transmitter do?

A. Transmits the pulses, but does not receive any reflections.

B. Transmits the pulses, receives reflections, and processes them to determine altitude.

C. Transmits the pulses, receives reflections, and processes the data to determine altitude, then sends the information to the mission computer.

D. Provides cockpit weather information to the pilot.

2. Your ADF system determines what for your ground system?

A. Altitude

B. Bearing

C. Ground speed

D. Distance

3. What is the basic measurement principle of a radar altimeter?

A. Doppler shift of the reflected RF energy

B. Time required for the RF pulse to travel from the aircraft to the Earth's surface and back

C. Frequency difference between transmitted and received signals

D. Atmospheric pressure changes

4. What approach helps achieve determinism in real-time RPC?

A. Unbounded latency RPC.

B. Asynchronous RPC with timeouts and bounded latency.

C. Bounded latency RPC patterns with timeout handling and synchronous semantics.

D. RPC should never be used in distributed systems.

5. A RADAR Altimeter consists of which of the following?

A. Height Indicator (or HUD)

B. Electronic Altimeter Receiver-Transmitter

C. RADAR Altimeter Antenna

D. All of the above

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6. Is the radar altimeter affected by EMCON?

A. No

B. Sometimes

C. Not at all

D. Yes

7. What is the function of the ADF when radios are keyed according to the A-395 Relay Assembly?

A. Increases signal strength of the ADF antenna

B. Provides dial indication of ADF status

C. Powers the ADF transmitter

D. Deselects ADF antennas when radios are keyed

8. In Air-to-Air TACAN mode, which data cannot be detected?

A. Bearing

B. Range

C. ID tone

D. Signal strength

9. TACAN offers 3 modes, what are they?

A. Transmit, Receive, Nav-Assist

B. Receive, Transmit/Receive, Air-to-Air

C. Radar, Sonar, Infrared

D. Transmit Only, Receive Only, Hold

10. RADAR Altimeter operation is based on the measurement of time for an RF pulse to travel from the aircraft to the Earth's surface and back.

A. The measurement of time required for an RF pulse to travel from the aircraft to the Earth's surface and return.

B. The calculation of airspeed from pitot pressure differences.

C. The determination of aircraft yaw from gyros.

D. The measurement of wind speed from radar echoes.

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Answers

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

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Explanations

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1. What does an Electronic Altimeter Receiver-Transmitter do?

A. Transmits the pulses, but does not receive any reflections.

B. Transmits the pulses, receives reflections, and processes them to determine altitude.

C. Transmits the pulses, receives reflections, and processes the data to determine altitude, then sends the information to the mission computer.

D. Provides cockpit weather information to the pilot.

This device is a radar-based height-measuring unit. It transmits radio pulses toward the ground, receives the reflections, and uses the time it takes for the pulses to travel to the ground and back to calculate altitude above the surface. It then passes that altitude data to the mission computer so the system can use it for automated control, navigation, and decision-making. It isn't a weather source for the cockpit; weather information comes from a different subsystem.

2. Your ADF system determines what for your ground system?

A. Altitude

B. Bearing

C. Ground speed

D. Distance

The main idea being tested is what an ADF provides for navigation. An Automatic Direction Finder is used with a ground-based beacon (like an NDB) to tell you the direction to that beacon. In other words, it gives you the bearing from your aircraft toward the ground station. This directional information helps you navigate toward or around the beacon, but it does not tell you your altitude, how fast you're moving over the ground, or how far away you are from the beacon. Altitude comes from the altimeter, ground speed from airspeed and wind data, and distance to the beacon requires a range measurement such as DME or GPS.

3. What is the basic measurement principle of a radar altimeter?

A. Doppler shift of the reflected RF energy

B. Time required for the RF pulse to travel from the aircraft to the Earth's surface and back

C. Frequency difference between transmitted and received signals

D. Atmospheric pressure changes

Measuring altitude with a radar altimeter relies on the time-of-flight principle. The device emits a brief RF pulse toward the ground and then detects the echo. By precisely timing the round-trip interval and using the fact that electromagnetic waves travel at the speed of light, the altitude is found as roughly half of the product of the travel time and the speed of light (with small corrections for air, if needed). Doppler shift or frequency differences relate to motion along the line of sight rather than height, so they aren't the method used to determine altitude. Atmospheric pressure changes aren't the measurement method either; while pressure correlates with altitude in general, the radar altimeter determines height from the reflected signal's travel time, not from pressure readings.

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4. What approach helps achieve determinism in real-time RPC?

A. Unbounded latency RPC.

B. Asynchronous RPC with timeouts and bounded latency.

C. Bounded latency RPC patterns with timeout handling and synchronous semantics.

D. RPC should never be used in distributed systems.

Determinism in real-time RPC comes from guaranteeing a maximum time for an interaction and a predictable flow of events. Bounded latency means every RPC completes within a known upper limit, so the system can schedule tasks with hard deadlines. Timeout handling ensures that if that bound is exceeded, the call fails fast and follows a defined recovery path rather than waiting indefinitely, preventing hangs and cascading delays. Synchronous semantics means the caller waits for the RPC result before proceeding, preserving a simple, ordered sequence of events and a fixed total time from request to response. Together, these elements provide a concrete worst-case duration and a controlled response path, which are essential for meeting real-time deadlines. Unbounded latency breaks deadlines and undermines determinism. Asynchronous RPC with timeouts and bounded per-call latency can limit how long a single call takes, but the non-blocking nature and potential reordering of responses add complexity to timing and sequencing, making pure determinism harder to guarantee. RPC should not be dismissed in distributed systems, as it's often the needed mechanism, but relying on unbounded or purely asynchronous patterns without clear, bounded, and synchronous behavior won't achieve real-time determinism.

5. A RADAR Altimeter consists of which of the following?

A. Height Indicator (or HUD)

B. Electronic Altimeter Receiver-Transmitter

C. RADAR Altimeter Antenna

D. All of the above

Radar altitude is measured by sending a microwave pulse, receiving its echo, and computing height above the ground. For this to work, the system must include the transmitter–receiver (the electronic altimeter transmitter-receiver), an antenna to radiate and collect the signal, and a display (Height Indicator or HUD) to show the altitude to the pilot. Each of these parts plays a essential role, so the complete radar altimeter comprises all of them.

6. Is the radar altimeter affected by EMCON?

A. No

B. Sometimes

C. Not at all

D. Yes

EMCON restricts RF emissions, and a radar altimeter is an active RF sensor that emits pulses downward to measure altitude. If emissions are limited or suppressed, the altimeter cannot transmit the pulses (or is greatly reduced in capability), so its measurement function is compromised. Without those transmissions, it can't reliably determine height, so it is affected by EMCON. In some cases, limited or non-emitting modes might be permitted, but the standard operation of a radar altimeter depends on emitting signals, which EMCON restricts.

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7. What is the function of the ADF when radios are keyed according to the A-395 Relay Assembly?

A. Increases signal strength of the ADF antenna

B. Provides dial indication of ADF status

C. Powers the ADF transmitter

D. Deselects ADF antennas when radios are keyed

The key idea is RF isolation between the transmitter and the navigation receiver. When the radios are keyed, the A-395 Relay Assembly automatically deselects the ADF antennas, removing them from the receive/transmit path. This prevents transmitter RF energy from coupling into the ADF receiver, which could desensitize it or cause interference with bearing readings. The ADF is a receiver-based system and does not require transmitter power or a dial indication from this relay function, so the safe, correct operation is to disconnect the ADF antennas during transmit.

8. In Air-to-Air TACAN mode, which data cannot be detected?

A. Bearing

B. Range

C. ID tone

D. Signal strength

TACAN bearing comes from an azimuth reference provided by a TACAN source with a defined angular grid. In air-to-air interrogations, there isn't a fixed azimuth reference between two moving aircraft, so the system can't determine the relative angle to the other TACAN unit. The two-way TACAN exchange still lets you measure distance (range) because the time of flight of the interrogation and reply gives slant range, and you can detect the other unit's ID tone and assess signal strength of the link. So, while you can obtain range, the ID and strength information are available, you cannot derive the relative bearing in this mode.

9. TACAN offers 3 modes, what are they?

A. Transmit, Receive, Nav-Assist

B. Receive, Transmit/Receive, Air-to-Air

C. Radar, Sonar, Infrared

D. Transmit Only, Receive Only, Hold

TACAN can operate in three selectable modes that define how it handles interrogations and replies. In the listening-only mode, the unit receives interrogations but does not send a reply, which is useful for monitoring or test scenarios. In the standard operating mode, it both transmits and receives, actively replying to interrogations and providing distance (DME) and bearing information for navigation to a TACAN station. The third mode enables air-to-air use, where one aircraft can interrogate another aircraft's TACAN and receive a reply, allowing mutual navigation or formation-use between aircraft. This combination covers typical navigation use as well as special mutual-operations between aircraft.

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10. RADAR Altimeter operation is based on the measurement of time for an RF pulse to travel from the aircraft to the Earth's surface and back.

A. The measurement of time required for an RF pulse to travel from the aircraft to the Earth's surface and return.

B. The calculation of airspeed from pitot pressure differences.

C. The determination of aircraft yaw from gyros.

D. The measurement of wind speed from radar echoes.

Radar altimeters determine height by measuring the round trip time of a radio pulse to the ground and back. The transmitter sends a pulse toward the Earth's surface, the echo is received, and the system clocks how long the flight took. Since electromagnetic waves travel at the speed of light, the height above ground is half of the product of this round trip time and the speed of light. This direct time-of-flight approach is what yields the altitude reading. The other descriptions refer to different instruments or functions—airspeed from pitot pressure differences, yaw from gyros, and wind speed from radar echoes—which are not how a radar altimeter derives altitude.

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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://ostrandmissioncomputers.examzify.com

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

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