EMBRAER REGIONAL JET (ERJ) SYSTEMS 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. Which situation indicates that ADSPs are working as intended?

A. Engine is off and airborne

B. Visible contamination on probes

C. Airborne with one engine running

D. Both B and C

2. What are the primary visual instruments in the ERJ-145 cockpit?

A. Altimeter, compass, and navigation displays

B. Artificial horizon, altimeter, and airspeed indicators

C. Flight management system and engine gauges

D. Communication radios and weather radar displays

3. What indicates a problem if FADEC aborts the start of an engine?

A. Fuel pump failure

B. Excessive engine vibration

C. Over temperature or inadequate fuel supply

D. Lack of engine rotation

4. What is one of the main functions of the Traffic Collision Avoidance System (TCAS)?

A. To control cabin pressure

B. To improve fuel efficiency

C. To avoid mid-air collisions

D. To enhance in-flight navigation

5. What condition allows for the activation of the automatic wheel braking system?

A. Touchdown only

B. When spinning without gear

C. Before the landing gear is retracted

D. While in flight

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6. What is the role of fluid reservoirs in the ERJ hydraulic system?

A. Monitor pressure

B. Store hydraulic fluid

C. Control temperature

D. Reduce noise

7. In what circumstances is the ram air turbine (RAT) deployed?

A. During normal operations for efficiency

B. When the aircraft lands

C. During electrical system failures for emergency power

D. When cruising altitude is achieved

8. What helps maintain the hydraulic pressure in the ERJ hydraulic system?

A. Electric pump

B. Fluid reservoirs

C. Engine compressors

D. Air conditioning packs

9. How can the crew respond to an engine failure during flight?

A. Execute a controlled descent and manage thrust

B. Immediately initiate a mayday call

C. Perform an emergency landing without further actions

D. Shut down all non-essential systems

10. What is the function of the pitch trim system in the ERJ?

A. To control engine power

B. To assist in stabilizing the aircraft's pitch attitude

C. To increase fuel efficiency

D. To enhance landing approaches

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Answers

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

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Explanations

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1. Which situation indicates that ADSPs are working as intended?

A. Engine is off and airborne

B. Visible contamination on probes

C. Airborne with one engine running

D. Both B and C

ADSPs, or Air Data Sensor Probes, play a crucial role in providing accurate air data to the aircraft's systems, which is essential for safe operation. When evaluating whether ADSPs are functioning correctly, it is important to consider scenarios that allow them to operate under normal conditions. For the situation where the engine is off and aircraft is airborne, the ADSPs may not be receiving proper airflow, which could lead to inaccurate readings. Additionally, visible contamination on probes would obstruct the sensors, preventing them from delivering reliable data, thus indicating a malfunction or issue with the ADSPs. Conversely, when the aircraft is airborne with one engine running, the ADSPs can still function properly as long as the probes are clear and the airflow is adequate. This scenario suggests that the air data is being collected accurately. Therefore, when evaluating different scenarios, having visible contamination (like ice or debris) on probes or airborne with one engine running shows conditions under which the probes may still signal normal operational function or slight degradation that needs attention. In this case, both the presence of one engine running and the visual contamination recognition are significant indicators that there are aspects of the ADSPs that require monitoring and possibly address any faults, making the selection of multiple

2. What are the primary visual instruments in the ERJ-145 cockpit?

A. Altimeter, compass, and navigation displays

B. Artificial horizon, altimeter, and airspeed indicators

C. Flight management system and engine gauges

D. Communication radios and weather radar displays

The primary visual instruments in the ERJ-145 cockpit include the artificial horizon, altimeter, and airspeed indicators. These instruments are essential for flight navigation and control, providing critical information to pilots during various phases of flight. The artificial horizon, or attitude indicator, shows the aircraft's orientation relative to the horizon, indicating whether the wing is level or if the plane is climbing, descending, or turning. The altimeter measures altitude, allowing pilots to maintain the appropriate flight level and avoid terrain. The airspeed indicator provides vital information about the aircraft's speed relative to the surrounding air, which is crucial for performance management, particularly during takeoff, landing, and in-flight maneuvers. These instruments are deemed primary because they directly inform the pilot about essential flight parameters that affect safety and aircraft management. Understanding the readings from these instruments is foundational to flying an aircraft safely. Other options, while they include important systems, do not primarily serve the basic role of pilot awareness and navigation necessary for safe flight operations.

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3. What indicates a problem if FADEC aborts the start of an engine?

A. Fuel pump failure

B. Excessive engine vibration

C. Over temperature or inadequate fuel supply

D. Lack of engine rotation

When the Full Authority Digital Engine Control (FADEC) system aborts the start of an engine, it typically does so to protect the engine from potential damage. The correct reasoning for option C being the appropriate explanation relates directly to the parameters that FADEC monitors during the start sequence. FADEC is designed to ensure that the engine operates within safe and recommended limits. If there is an over-temperature condition detected, it can indicate that the engine is getting too hot during the start process, perhaps due to a malfunction or an issue with the fuel-air mixture. Similarly, inadequate fuel supply can lead to abnormal combustion characteristics, affecting the engine's performance and stability. Consequently, FADEC will abort the start to prevent damage from occurring in these scenarios. In contrast to option C, the other options provide scenarios that may contribute to performance issues but are not directly the primary reasons for a FADEC-initiated abort during engine start. While fuel pump failure, excessive vibration, and lack of engine rotation can all indicate problems during engine operation, they are related to different operational conditions rather than the specific triggers that would cause FADEC to abort an engine start due to temperature and fuel supply concerns.

4. What is one of the main functions of the Traffic Collision Avoidance System (TCAS)?

A. To control cabin pressure

B. To improve fuel efficiency

C. To avoid mid-air collisions

D. To enhance in-flight navigation

The Traffic Collision Avoidance System (TCAS) plays a critical role in ensuring the safety of aircraft in flight by actively monitoring air traffic around the aircraft. One of its primary functions is to prevent mid-air collisions by providing pilots with visual and audible warnings about other aircraft that may pose a collision risk. TCAS achieves this by using transponder signals from nearby aircraft to assess their altitude, speed, and proximity. If a potential conflict is detected, TCAS issues resolution advisories, suggesting maneuvers for the pilots to follow, such as climbing or descending to avoid an imminent collision. This proactive safety feature is essential for maintaining safe separation between aircraft and is particularly important in busy airspace. The other options do not align with the primary function of the TCAS. Controlling cabin pressure pertains to environmental control systems, improving fuel efficiency relates to aircraft performance systems, and enhancing in-flight navigation is connected to avionic systems designed for navigation rather than collision avoidance. Each of these aspects serves important functions within the aircraft, but they do not address the specific aim of TCAS, which is focused solely on preventing mid-air collisions.

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5. What condition allows for the activation of the automatic wheel braking system?

A. Touchdown only

B. When spinning without gear

C. Before the landing gear is retracted

D. While in flight

The automatic wheel braking system on the Embraer Regional Jet is designed to activate under specific conditions to ensure optimal safety and efficiency during operations. One of the primary conditions for activation is before the landing gear is retracted. This timing allows the system to ensure the aircraft is prepared for landing while also managing the braking functions effectively as soon as weight is applied to the wheels during touchdown. When the landing gear is extended and prior to retraction, the system can prepare to engage the brakes automatically as part of the overall operational procedures. This is crucial for controlling the aircraft and ensuring stability throughout the landing and takeoff phases. Touchdown activation primarily pertains to manual or secondary systems intervening rather than the automatic system initiating. The operation while spinning without gear and in flight does not align with the intended use of the automatic brake system, as these phases do not involve ground contact where braking would typically be applied. Thus, the focus on conditions prior to gear retraction aligns with the aircraft's operational design and safety protocols.

6. What is the role of fluid reservoirs in the ERJ hydraulic system?

A. Monitor pressure

B. Store hydraulic fluid

C. Control temperature

D. Reduce noise

Fluid reservoirs in the ERJ hydraulic system serve the essential function of storing hydraulic fluid. This storage is critical because the hydraulic system requires a consistent supply of pressurized fluid to operate various components like landing gear, flaps, and brakes. By maintaining a reserve of hydraulic fluid, the reservoirs ensure that there is always an adequate amount ready to be pressurized and sent to the necessary components when needed. This capability is vital for the smooth operation and reliability of the aircraft's hydraulic systems. The design of the reservoirs also plays a role in accommodating changes in fluid volume due to thermal expansion, system operation, and fluid transfer during different phases of flight. While reservoirs can indirectly influence pressure and may affect temperature management by providing a space for fluid to cool, their primary and most direct role is to store hydraulic fluid, making the fluid storage function the most appropriate choice for this question.

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7. In what circumstances is the ram air turbine (RAT) deployed?

A. During normal operations for efficiency

B. When the aircraft lands

C. During electrical system failures for emergency power

D. When cruising altitude is achieved

The ram air turbine (RAT) is an emergency device designed to provide hydraulic and electrical power to essential systems when the aircraft experiences an electrical system failure. In this particular scenario, the RAT is deployed when the aircraft's normal power sources become unavailable, ensuring the pilot can maintain control and operate critical systems, such as flight controls and navigation instruments. In event of an electrical failure, the RAT harnesses the airflow through the open turbine, converting it into mechanical energy, which is then transformed into electrical power. This is crucial for maintaining aircraft operation and safety during critical situations. Other circumstances such as normal operations for efficiency, during landing, or at cruising altitude do not involve the deployment of the RAT as these occasions typically rely on standard power systems and do not require the backup functions that the RAT provides. Thus, the only appropriate situation for the RAT's activation is during an electrical system failure for emergency power.

8. What helps maintain the hydraulic pressure in the ERJ hydraulic system?

A. Electric pump

B. Fluid reservoirs

C. Engine compressors

D. Air conditioning packs

In the context of the ERJ hydraulic system, fluid reservoirs play a crucial role in maintaining hydraulic pressure. They serve as storage units for hydraulic fluid, ensuring that there is an adequate supply of fluid available to the hydraulic system. When the hydraulic system operates, fluid is pumped from these reservoirs to the various components that require hydraulic pressure, such as flight controls and landing gear systems. The reservoirs help mitigate pressure fluctuations and ensure that there is enough fluid to maintain consistent pressure within the system. They also allow for thermal expansion of the fluid, which helps to avoid pressure build-up that could lead to system failures. By providing a stable source of fluid, the reservoirs support the overall functionality and reliability of the hydraulic system, ensuring that it can respond effectively to the demands of the aircraft's operations.

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9. How can the crew respond to an engine failure during flight?

A. Execute a controlled descent and manage thrust

B. Immediately initiate a mayday call

C. Perform an emergency landing without further actions

D. Shut down all non-essential systems

In the event of an engine failure during flight, the crew's primary focus is on maintaining control of the aircraft and ensuring safety for everyone on board. Executing a controlled descent and managing thrust represents a standard and effective response. This approach involves assessing the aircraft's performance and handling characteristics after losing one engine. Maintaining altitude may not always be possible, so a controlled descent allows the crew to safely navigate to a lower altitude where they can continue to manage the aircraft's energy and make informed decisions regarding the next steps, including identifying potential landing sites. Thrust management is equally important as it helps the pilot maintain directional control and optimize performance while dealing with the asymmetrical thrust created by an engine failure. In this situation, however, initiating a mayday call, performing an emergency landing immediately, and shutting down all non-essential systems might not be the most prudent first steps the crew should take. A mayday call is essential but should not distract from the immediate need to control the aircraft effectively. An emergency landing should be planned based on a thorough evaluation of the situation, and shutting down non-essential systems could reduce overall situational awareness and safety during such a critical event. Therefore, executing a controlled descent while managing thrust is the most appropriate initial response to an engine

10. What is the function of the pitch trim system in the ERJ?

A. To control engine power

B. To assist in stabilizing the aircraft's pitch attitude

C. To increase fuel efficiency

D. To enhance landing approaches

The pitch trim system in the ERJ is designed to assist in stabilizing the aircraft's pitch attitude. This system allows the pilot to adjust the tailplane's aerodynamic forces without having to maintain constant control wheel pressure. By trimming the pitch, the aircraft can maintain a desired attitude and altitude more easily, reducing pilot workload during flight, particularly during prolonged periods of cruise or when the aircraft is actively maneuvering. It works by adjusting the elevator's position, which directly affects the aircraft's nose-up or nose-down orientation. With the trim set appropriately, the aircraft can fly hands-off at a stable pitch setting, enhancing overall control and comfort for both pilots and passengers. This is particularly important during various phases of flight, such as cruising, where steady flight conditions are crucial for efficiency and safety.

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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://erjsystems.examzify.com

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

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