

Instrument Rating – Aeroplane (INRAT) Practice Exam (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

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1. What is a crucial component to verify before going below DA minimums?
 - A. Aircraft weight and balance
 - B. Visual or non-visual confirmation
 - C. ATC communication logs
 - D. Flight path alignment

2. If the pitot tube has completely frozen over, what will accelerating show?
 - A. An increase in airspeed
 - B. No change in airspeed
 - C. A decrease in airspeed
 - D. Inconsistent airspeed readings

3. What can be expected if a pilot notes an increasing number of ice crystals during a flight in a mixed icing environment?
 - A. Increasing intensity of clear icing
 - B. Less intensity of icing and more rime icing
 - C. No change in icing conditions
 - D. Severe icing conditions

4. What type of approach is a visual approach executed under?
 - A. VFR approach with IFR flight plan
 - B. VFR approach with VFR flight rules
 - C. IFR approach with VFR weather conditions
 - D. VFR approach with no flight plan

5. In which type of clouds does Convective Cloud Icing predominantly occur?
 - A. Stratus clouds
 - B. Cumulus and Cumulonimbus clouds
 - C. Cirrus clouds
 - D. Altostratus clouds

6. What does SORD indicate in static blockage?
- A. Static Over-Reads in Descent
 - B. Static Over-Ride during Climb
 - C. Static Over-Correction during Descent
 - D. Static Operation Reads Descent
7. Which altitude is deemed safe for mountain flying in winter?
- A. Above the highest terrain
 - B. 1000 feet above the published MEA
 - C. 2000 feet over the nearest obstacle
 - D. At or above the standard altitude
8. What is the primary role of ATC during a contact approach?
- A. To issue landing clearances only
 - B. To ensure clearance through all airspace
 - C. To authorize the contact approach upon pilot request
 - D. To provide taxi instructions after landing
9. Where are large supercooled water droplets typically found?
- A. Upper levels of stable clouds
 - B. Lower levels of unstable clouds
 - C. Mid-levels of cumulonimbus clouds
 - D. Upper levels of stratus clouds
10. What type of icing occurs when the droplets are small and the rate of catch is low?
- A. Clear icing
 - B. Rime icing
 - C. Mixed icing
 - D. Layer icing

Answers

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

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Explanations

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1. What is a crucial component to verify before going below DA minimums?

- A. Aircraft weight and balance
- B. Visual or non-visual confirmation**
- C. ATC communication logs
- D. Flight path alignment

Before descending below Decision Altitude (DA) minimums, it is essential to have visual or non-visual confirmation that you are in a position to safely continue the approach and landing. This confirmation ensures that the aircraft can either visually identify the runway environment or confirm the necessary instrumentation to proceed safely. When below DA, the pilot must have the required visual cues necessary for a safe landing, or a means of confirming the aircraft is on the correct flight path and that it's safe to land. This is critical for maintaining situational awareness and avoiding controlled flight into terrain. The ability to see the runway or the relevant approach lighting system provides the pilot with the information needed to proceed below DA with confidence. In contrast, while factors like aircraft weight and balance, communication logs, and flight path alignment are important to overall flight safety, they do not explicitly address what must be confirmed at DA. The primary focus at this critical phase of flight is ensuring visual or instrument confirmation for a safe landing decision.

2. If the pitot tube has completely frozen over, what will accelerating show?

- A. An increase in airspeed
- B. No change in airspeed**
- C. A decrease in airspeed
- D. Inconsistent airspeed readings

When the pitot tube is completely frozen over, it becomes blocked and unable to measure the dynamic air pressure necessary for determining airspeed. The airspeed indicator relies on the difference between the static pressure (from the static port) and the dynamic pressure (from the pitot tube) to calculate an accurate reading. When the aircraft accelerates in this scenario, the airflow may not be properly captured by the pitot tube due to the blockage. Since the airspeed indicator is unable to receive updates on dynamic pressure changes as the aircraft accelerates, it will not reflect any change in airspeed. As a result, the airspeed reading remains constant, even though the actual speed of the aircraft is increasing. This is why the correct answer indicates that there will be no change in airspeed readings from the indicator, despite the aircraft's acceleration.

3. What can be expected if a pilot notes an increasing number of ice crystals during a flight in a mixed icing environment?

- A. Increasing intensity of clear icing
- B. Less intensity of icing and more rime icing
- C. No change in icing conditions
- D. Severe icing conditions

When a pilot observes an increasing number of ice crystals in a mixed icing environment, it typically indicates a transition from clear icing conditions to rime icing. Rime icing occurs when supercooled water droplets freeze upon contact with a surface, forming a rough, opaque layer of ice. The presence of ice crystals suggests that the atmosphere is colder and may lead to the formation of these smaller, less intense ice particles as compared to larger supercooled droplets that contribute to clear icing. In this scenario, the increasing number of ice crystals is seen as a sign that the icing conditions are changing in a way that makes rime icing more predominant. This shift usually leads to less overall intensity of icing since rime icing, in general, tends to accumulate more slowly and be less structured than clear ice. Understanding this relationship is crucial for pilots, as it helps them anticipate how to manage flight safety while operating in environments conducive to icing.

4. What type of approach is a visual approach executed under?

- A. VFR approach with IFR flight plan
- B. VFR approach with VFR flight rules
- C. IFR approach with VFR weather conditions
- D. VFR approach with no flight plan

A visual approach is executed under an IFR (Instrument Flight Rules) flight plan when the visibility conditions are VFR (Visual Flight Rules). This approach allows pilots to transition from instruments to visual navigation to align for landing when the weather is suitable. When flying under an IFR flight plan, pilots maintain their IFR clearance but are permitted to navigate visually once they have established visual reference to the runway or the approach path. This process enhances efficiency, allowing aircraft to utilize visual references while still under the guidance of air traffic control, which can assist in reducing congestion at busy airports. It is important to understand that visual approaches can only be conducted in suitable weather conditions; thus, this scenario may not apply to approaches under VFR flight rules or without a flight plan, as it would typically fall outside the parameters for maintaining IFR clearances and requirements.

5. In which type of clouds does Convective Cloud Icing predominantly occur?

- A. Stratus clouds
- B. Cumulus and Cumulonimbus clouds
- C. Cirrus clouds
- D. Altostratus clouds

Convective Cloud Icing primarily occurs in cumulus and cumulonimbus clouds due to the intense vertical development and turbulence associated with these types of clouds. Cumulus clouds are characterized by their puffy appearance and vertical growth, which creates a conducive environment for updrafts that can lead to supercooled water droplets forming and adhering to aircraft surfaces. Cumulonimbus clouds, known for their towering structure and potential severe weather phenomena, are particularly notorious for producing significant icing conditions, especially at higher altitudes where temperatures may be below freezing. The strong updrafts present in these clouds can cause water droplets to remain in a liquid state even at sub-zero temperatures, which is the basis for supercooled liquid water. When an aircraft encounters these conditions, it can lead to rapid accumulation of ice, increasing the hazard for pilots. Other types of clouds, such as stratus, cirrus, and altostratus, generally lack the vertical development necessary to sustain the intense convection that fosters icing conditions. These clouds typically do not have the same atmospheric dynamics that lead to the presence of supercooled water at flight levels. Therefore, understanding the characteristics and conditions of cumulus and cumulonimbus clouds is crucial for pilots to anticipate and avoid convective cloud

6. What does SORD indicate in static blockage?

- A. Static Over-Reads in Descent
- B. Static Over-Ride during Climb
- C. Static Over-Correction during Descent
- D. Static Operation Reads Descent

The term SORD, when related to static blockage, refers to "Static Over-Reads in Descent." This indicates a situation where the static pressure system becomes obstructed, leading to erroneous readings on instruments that depend on static pressure, such as the altimeter, airspeed indicator, and vertical speed indicator. When flying in a descent, static blockage can result in the altimeter displaying a higher altitude than the actual altitude, providing a misleading representation of the aircraft's height. Understanding this concept is crucial for pilots, particularly those flying in instrument conditions or high-traffic areas where accurate altitude awareness is necessary for safety. Therefore, the correct interpretation of SORD highlights the importance of recognizing the symptoms of static pressure system failures during critical phases of flight, such as descent.

7. Which altitude is deemed safe for mountain flying in winter?

- A. Above the highest terrain
- B. 1000 feet above the published MEA
- C. 2000 feet over the nearest obstacle
- D. At or above the standard altitude

In mountain flying, especially during winter, safety is paramount due to the challenging terrain and potential weather conditions. The correct altitude deemed safe for mountain flying is one that takes into account the minimum en route altitude (MEA). When flying at or above 1000 feet above the published MEA, pilots can ensure adequate vertical clearance from terrain and obstacles, accounting for possible variations in the reality of flight operations. The MEA is specifically designed to ensure that aircraft remain clear of terrain and obstacles while also providing uninterrupted radio communication. By maintaining an altitude that is at least 1000 feet above this published MEA, pilots can enhance safety margins, particularly where mountainous terrain may not provide clear visibility or where weather conditions could potentially lead to turbulence or other hazards. While other altitudes, like being above the highest terrain or over the nearest obstacle, may provide safety in some contexts, they don't specifically account for the minimum en route information critical for navigation and obstruction avoidance, particularly in mountainous areas where terrain can vary dramatically. Thus, the established protocol of flying at 1000 feet over the MEA during winter is often regarded as a safer practice in mountain flying.

8. What is the primary role of ATC during a contact approach?

- A. To issue landing clearances only
- B. To ensure clearance through all airspace
- C. To authorize the contact approach upon pilot request
- D. To provide taxi instructions after landing

The primary role of Air Traffic Control (ATC) during a contact approach is to authorize the contact approach upon pilot request. In this scenario, the pilot requests to conduct a contact approach, which allows them to proceed visually to the airport when they have the required visual references and are in VFR (Visual Flight Rules) conditions, even when inside controlled airspace. Once the pilot requests this type of approach and meets the necessary criteria, ATC assesses the situation and either grants or denies the request based on traffic conditions, weather, and other relevant factors. This authorization is pivotal since it ensures that the pilot can proceed with the approach while still maintaining safety standards and operational efficiency. The other choices do not capture the specific role of ATC during a contact approach. While issuing landing clearances, ensuring clearance through airspace, and providing taxi instructions are all important functions of ATC, they do not pertain as directly to the contact approach authorization as the correct choice does. The focus of the correct answer highlights ATC's responsibility in facilitating the pilot's request within the context of a contact approach.

9. Where are large supercooled water droplets typically found?

- A. Upper levels of stable clouds
- B. Lower levels of unstable clouds
- C. Mid-levels of cumulonimbus clouds
- D. Upper levels of stratus clouds

Large supercooled water droplets are typically found in the lower levels of unstable clouds. Unstable clouds, such as towering cumulus and cumulonimbus clouds, are characterized by strong updrafts that can lead to the formation of larger droplets. As air rises rapidly, it cools adiabatically, and if the temperatures are below freezing but the droplets remain unfrozen (supercooled), they can reach sizes larger than those typically found in stable environments. This is a critical factor since supercooled droplets pose a higher risk for aircraft, especially during ascent and descent phases when encountering such clouds. In contrast, stable clouds generally have more uniform and smaller water droplets due to weaker vertical motion, hence less likelihood of large supercooled droplets. Mid-level and upper-level clouds typically do not contain large supercooled droplets due to different atmospheric conditions and temperature profiles.

10. What type of icing occurs when the droplets are small and the rate of catch is low?

- A. Clear icing
- B. Rime icing
- C. Mixed icing
- D. Layer icing

Rime icing occurs when small water droplets come into contact with a surface and freeze almost instantaneously. This type of icing is characterized by a rapid accumulation of ice that creates a rough, white, and opaque appearance. The small size of the droplets plays a significant role, as they have a higher tendency to freeze immediately upon contact, resulting in a lower ice accumulation rate compared to larger droplets. In conditions that lead to rime icing, the temperature and droplet size are critical. Smaller droplets can mean they have less kinetic energy, which contributes to their lower rate of catch. As a result, the ice forms in a more brittle and fragile state, making rime icing typically less hazardous than clear icing, which can be more serious due to its heavier and glossy characteristics that form from larger droplets. Understanding these characteristics helps pilots assess and manage the risks associated with icing during flight, particularly under instrument conditions where visual cues may be limited.

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://inrataeroplane.examzify.com>

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

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