

AIRFRAME & POWERPLANT (A&P) INSPECTION AUTHORIZATION (IA) PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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. Which altitude reading is not acceptable at a barometric pressure of 25.842?**
 - A. 4,025 feet.
 - B. 4,046 feet.
 - C. 3,965 feet.
 - D. 3,950 feet.

- 2. What is 28 degrees Celsius in Fahrenheit?**
 - A. 86.2 degrees Fahrenheit.
 - B. 81.4 degrees Fahrenheit.
 - C. 82.4 degrees Fahrenheit.
 - D. 80.0 degrees Fahrenheit.

- 3. How is the center of gravity (CG) of an aircraft determined?**
 - A. Dividing the total arms by the total moments.
 - B. Dividing the total moment by the total weight.
 - C. Multiplying the total weight by the total moment.
 - D. Subtracting the total arms from the total weight.

- 4. What size registration marks can a small U.S. -registered aircraft built at least 30 years ago display?**
 - A. 2 inch.
 - B. 12 inch.
 - C. Either 2 inch or 12 inch.
 - D. 3 inch.

- 5. What is one characteristic of the engine for the Piper PA-28-235?**
 - A. Requires Lycoming Flange bushing 720685.
 - B. Has one fifth-order damper and one sixth-order damper.
 - C. Has a smaller oil passage at rear main.
 - D. Requires a specific fuel type.

6. In a non-flexing hydraulic installation, which aspect affects the minimum bend radius?
- A. Vacuum pressure
 - B. Flexibility of the hose
 - C. Operating pressure
 - D. Environmental conditions
7. The term "resin rich" refers to a composite material that is?
- A. Filled with resin but lacks sufficient reinforcing fiber
 - B. Filled with reinforcing fiber but lacks sufficient resin
 - C. Cured without using external heating
 - D. Impregnated only with resin
8. Which abrasive is not suitable for removing corrosion from aluminum alloys?
- A. Aluminum oxide.
 - B. Silicon carbide.
 - C. Garnet.
 - D. Steel wool.
9. What material is recommended for corrosion removal from ferrous alloys with a strength of 220,000 PSI?
- A. Garnet.
 - B. Acid-base stripper.
 - C. Silicon carbide.
 - D. Sandpaper.
10. What is the maximum weight and center-of-gravity range (at maximum weight) of Piper model PA-34-200T, serial number 34-7970136?
- A. (+101.2) to (+105.2) at 4690 lbs
 - B. (+90.6) to (94.6) at 4570 lbs
 - C. (+89.1) to (95.4) at 4500 lbs
 - D. (+100.0) to (+106.0) at 4800 lbs

Answers

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

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Explanations

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1. Which altitude reading is not acceptable at a barometric pressure of 25.842?

- A. 4,025 feet.
- B. 4,046 feet.**
- C. 3,965 feet.
- D. 3,950 feet.

To determine the acceptability of altitude readings at a specific barometric pressure, it is important to understand the relationship between pressure altitude, true altitude, and the standard atmospheric pressure. At a barometric pressure of 25.842 inHg, it is essential to convert the pressure to a corresponding altitude using the standard atmosphere model. Under standard conditions, each inch of mercury corresponds to a specific altitude above sea level, with higher altitudes associated with lower barometric pressures. The typical sea level pressure is 29.92 inHg. Therefore, a barometric pressure of 25.842 indicates that the altitude must be adjusted because it is significantly lower than standard pressure. When calculating the altitudes based on this pressure setting, we find that some of the provided altitudes align closely with what would be expected at that pressure, while one of the options, in this case, shows a discrepancy. Specifically, the reading of 4,046 feet would exceed typical expectations for a barometric setting of 25.842 inHg, making it the altitude reading that stands out as unacceptable. Therefore, when analyzing the readings against the expected outcomes based on the barometric pressure configuration, option B emerges as the one that deviates from what would be considered an

2. What is 28 degrees Celsius in Fahrenheit?

- A. 86.2 degrees Fahrenheit.
- B. 81.4 degrees Fahrenheit.
- C. 82.4 degrees Fahrenheit.**
- D. 80.0 degrees Fahrenheit.

To convert Celsius to Fahrenheit, the formula used is $F = C \times \frac{9}{5} + 32$. In this case, you start with 28 degrees Celsius. By applying the formula: 1. Multiply 28 by $\frac{9}{5}$ (which is 1.8): $(28 \times 1.8 = 50.4)$. 2. Add 32 to that result: $(50.4 + 32 = 82.4)$. Thus, 28 degrees Celsius is equal to 82.4 degrees Fahrenheit. This is the value that correctly represents the conversion, confirming that the answer is accurate. The calculations demonstrate that the understanding of temperature conversion between Celsius and Fahrenheit is essential for anyone involved in fields that require precise temperature measurements, such as aviation and engineering.

3. How is the center of gravity (CG) of an aircraft determined?

- A. Dividing the total arms by the total moments.
- B. Dividing the total moment by the total weight.**
- C. Multiplying the total weight by the total moment.
- D. Subtracting the total arms from the total weight.

The center of gravity (CG) of an aircraft is determined by dividing the total moment by the total weight. This method involves calculating the moments created by each weight in relation to a chosen reference point, typically the datum. The total moment is the sum of the individual moments, which are derived by multiplying the weight of each component by its distance (arm) from the datum. Once the total moment is calculated, dividing it by the total weight gives the location of the center of gravity in relation to the datum. Understanding CG is crucial because it affects the balance, stability, and performance of the aircraft. If the CG is too far forward or aft, it can lead to poor handling characteristics and difficulty in controlling the aircraft. Therefore, knowing how to calculate it accurately is essential for safe aircraft operation and maintenance.

4. What size registration marks can a small U.S. -registered aircraft built at least 30 years ago display?

- A. 2 inch.
- B. 12 inch.
- C. Either 2 inch or 12 inch.**
- D. 3 inch.

The correct answer indicates that a small U.S.-registered aircraft built at least 30 years ago has the option to display either 2-inch or 12-inch registration marks. This flexibility is provided under FAA regulations, which state that certain aircraft manufactured more than 30 years ago are not required to adhere to the 12-inch registration marking size that applies to newer aircraft. This allows owners of older aircraft to choose smaller marks (2-inch) for aesthetic reasons or to better suit the appearance of their aircraft, while still maintaining compliance with registration requirements. Smaller markings can be particularly appealing for vintage or classic aircraft designs, aligning with the preservation of the aircraft's original look. In contrast, the limitations of the other choices stem from the fact that only the 2-inch and 12-inch sizes are permissible, as established by regulatory guidelines. Thus, the option that allows for both sizes acknowledges the unique status of these older aircraft under the FAA's rules.

5. What is one characteristic of the engine for the Piper PA-28-235?

- A. Requires Lycoming Flange bushing 720685.
- B. Has one fifth-order damper and one sixth-order damper.**
- C. Has a smaller oil passage at rear main.
- D. Requires a specific fuel type.

The engine for the Piper PA-28-235 is characterized by having both a fifth-order damper and a sixth-order damper as part of its vibration-damping system. This is important because these dampers are designed to manage and reduce the vibrations produced by the engine during operation, contributing to both the performance and longevity of the engine as well as enhancing the overall comfort of the flight experience. The fifth-order damper primarily helps in controlling the higher frequency vibrations that can occur with engine operation, while the sixth-order damper assists in managing lower frequency vibrations. The combination of these dampers ensures that the engine runs smoothly, which is crucial for maintenance and operational efficiency. Other choices may have specific relevance to different aspects of engine design or operation, but they do not accurately describe the unique vibration damping characteristics of the Piper PA-28-235 engine. For instance, while the engine may have particular requirements for components or fuel types, the uniqueness of the fifth and sixth-order dampers is distinctive and essential to understanding the engine's configuration and operational behavior.

6. In a non-flexing hydraulic installation, which aspect affects the minimum bend radius?

- A. Vacuum pressure
- B. Flexibility of the hose
- C. Operating pressure**
- D. Environmental conditions

The correct answer is based on the concept that the minimum bend radius of a hydraulic hose is significantly influenced by the operating pressure. When hydraulic systems operate at higher pressures, the fluid within the hoses exerts considerable force on the hose walls, which can lead to deformation if the hose is bent too sharply. This deformation can compromise the integrity of the hose and the hydraulic system overall. A hose subjected to high operating pressure requires a greater bend radius to maintain optimal flow and prevent kinking or damaging the hose. A tighter bend could lead to restrictions in fluid flow, increased wear, or even failure of the hose over time. Therefore, understanding the operating pressure of the system is critical when determining the appropriate specifications for hose installation, including the minimum bend radius. Other factors like the flexibility of the hose can influence how easy it is to maneuver the hose, but it's the operating pressure that ultimately dictates the safety and functionality of the installation. Environmental conditions may have an impact on material degradation or performance but are not as directly tied to the minimum bend radius as the operating pressure.

7. The term "resin rich" refers to a composite material that is?

- A. Filled with resin but lacks sufficient reinforcing fiber**
- B. Filled with reinforcing fiber but lacks sufficient resin
- C. Cured without using external heating
- D. Impregnated only with resin

The term "resin rich" indeed refers to a composite material that has a higher proportion of resin relative to reinforcing fibers. This situation indicates that the composite is saturated with resin yet may not contain enough reinforcing fibers to achieve optimal strength and structural properties. The excess resin can lead to a number of issues, including increased weight, reduced tensile strength, and potential for poor bonding performance, as the fibers are essential for providing the strength and stiffness to the composite material. In composite manufacturing, it's crucial to maintain a balanced ratio of resin to fibers to ensure the material properties are maximized for its intended application. A resin-rich composition does not fulfill this critical requirement, which is why understanding the implications of such a term is important in the field of composite materials.

8. Which abrasive is not suitable for removing corrosion from aluminum alloys?

- A. Aluminum oxide.
- B. Silicon carbide.**
- C. Garnet.
- D. Steel wool.

Silicon carbide is not suitable for removing corrosion from aluminum alloys primarily because it is significantly harder than aluminum. While it can effectively cut through certain materials, its abrasiveness can lead to excessive material removal and potential damage to the surface of the aluminum. This can result in a rough finish, which can expose the underlying material to further corrosion and compromise the structural integrity of the alloy. In contrast, aluminum oxide, garnet, and steel wool are abrasives that can be used carefully on aluminum alloys. Aluminum oxide is commonly used for its appropriate hardness and ability to create a smooth finish without excessive material loss. Garnet, similarly, can be used effectively for sanding and finishing without damaging the aluminum surface. Steel wool, while it can leave behind particles that might encourage corrosion, can still be used with caution in certain applications, as it tends to be less abrasive compared to silicon carbide.

9. What material is recommended for corrosion removal from ferrous alloys with a strength of 220,000 PSI?

- A. Garnet.
- B. Acid-base stripper.
- C. Silicon carbide.**
- D. Sandpaper.

Silicon carbide is recommended for corrosion removal from ferrous alloys with a strength of 220,000 PSI due to its hardness and effectiveness in grinding and polishing applications. This material is specifically designed to cut through tough metals without excessively damaging the underlying structure. Its durability allows it to maintain its cutting ability even on high-strength alloys, making it a suitable choice for providing a clean, smooth surface while effectively removing corrosive materials. Garnet, while a valid abrasive, is typically softer compared to silicon carbide and may not be as effective for tougher alloys. Acid-base strippers, although useful for certain types of corrosion removal, may not be suitable for all ferrous alloys due to the potential for chemical reactions that could lead to further corrosion or weakening of the alloy. Sandpaper, while commonly used for surface finishing, may lack the necessary grit and durability for effective corrosion removal from high-strength materials, potentially resulting in an inadequate finish or surface damage.

10. What is the maximum weight and center-of-gravity range (at maximum weight) of Piper model PA-34-200T, serial number 34-7970136?

- A. (+101.2) to (+105.2) at 4690 lbs
- B. (+90.6) to (94.6) at 4570 lbs**
- C. (+89.1) to (95.4) at 4500 lbs
- D. (+100.0) to (+106.0) at 4800 lbs

The correct answer provides the specific maximum weight and center-of-gravity (CG) range that corresponds accurately to the Piper model PA-34-200T, serial number 34-7970136. For this aircraft model, the maximum weight listed is 4570 lbs, and the center-of-gravity range at this weight is from (+90.6) to (+94.6). This information is critical for ensuring that the aircraft is loaded within its operational limits, which is essential for safe flight operations. Understanding the maximum allowable weight and the corresponding center-of-gravity range is fundamental for flight planning and performance calculations. If the aircraft is loaded beyond this weight or if the center of gravity is not within the specified range, it can adversely affect the aircraft's handling characteristics and overall safety during flight. Considering the values provided in other options, they do not align with the specifications for the Piper PA-34-200T. The maximum weights listed in those options exceed or are below the confirmed maximum for this model, making them incorrect. Knowing the correct maximum weight and CG range is vital for pilots and maintenance personnel when preparing the aircraft for flight or conducting inspections.

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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://aandpinspectionauthorization.examzify.com>

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

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