AVIATION INSTITUTE OF MAINTENANCE (AIM) BLOCK 16 PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Table of Contents

Copyright 1

Table of Contents 2

Introduction 3

How to Use This Guide 4

Questions 5

Answers 8

Explanations 10

Next Steps 15

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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. Explain a standard torque sequence for a multi-bolt flange joint.

A. Tighten bolts in a crisscross or star pattern, progressively to the final torque in multiple steps to equalize load.

B. Tighten bolts in a spiral around the flange.

C. Tighten all bolts in order of bolt number to final torque.

D. Tighten only alternating bolts.

2. When applying protective coating to propeller blades, what may be necessary to achieve final balancing?

A. Applying protective coating to both blades evenly

B. Removing protective coating from both blades completely

C. The application of more protective coating on one blade than the other to achieve final balancing

D. Not applying any coating for balance

3. Who is primarily responsible for maintaining an aircraft in airworthy condition?

A. the pilot

B. the mechanic

C. the FAA

D. the owner or operator

4. During pre-maintenance electrical safety checks, what is the purpose of lockout/tagout power sources?

A. To identify the task

B. To verify de-energization

C. To prevent re-energization of power sources during maintenance

D. To wear PPE

5. If voltage remains constant and resistance doubles, what happens to current according to Ohm's Law?

A. Current doubles.

B. Current remains the same.

C. Current halves.

D. Current increases by four times.

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6. Which elements are approved by an aircraft's type certificate?

A. weight and balance data

B. type design and operating limits

C. color scheme

D. tooling list

7. Where are the high and low pitch stops of a Hamilton Standard constant-speed propeller located?

A. In the hub

B. In the governor

C. In the nacelle

D. In the counterweight assembly

8. How do you verify zero voltage before working on a live electrical circuit?

A. De-energize the circuit, then verify with a properly rated test instrument against a known reference/ground.

B. Turn on the power and measure with a multimeter.

C. Only touch the conductor to feel for voltage.

D. Discharge the battery and assume it's safe.

9. What is used to record and approve for return to service major alterations and repairs?

A. FAA form 337

B. logbook entry

C. airworthiness certificate

D. service bulletin

10. Who may zero-time an engine after rebuilding it?

A. the engine manufacturer

B. a certified repair station

C. the aircraft owner

D. the FAA

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Answers

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

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Explanations

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1. Explain a standard torque sequence for a multi-bolt flange joint.

A. Tighten bolts in a crisscross or star pattern, progressively to the final torque in multiple steps to equalize load.

B. Tighten bolts in a spiral around the flange.

C. Tighten all bolts in order of bolt number to final torque.

D. Tighten only alternating bolts.

When torquing a multi-bolt flange, the goal is to apply clamping force evenly around the gasket to prevent leaks and avoid distortion. The standard approach is to tighten in a crisscross or star pattern, moving from one side to the opposite, and do so in several steps up to the final torque. This method distributes the load around the entire flange, so no single area is overcompressed early and the gasket seats smoothly. If you were to tighten in a spiral around the flange or strictly in bolt-number order, you'd create uneven loading—one area would bear more load first, which can distort the flange and lead to leaks. Tightening only alternating bolts also concentrates stress and can tilt or unevenly seat the gasket. Following the manufacturer's torque specs, and using a multi-step, cross-pattern sequence, ensures a uniform clamping force and a reliable seal.

2. When applying protective coating to propeller blades, what may be necessary to achieve final balancing?

A. Applying protective coating to both blades evenly

B. Removing protective coating from both blades completely

C. The application of more protective coating on one blade than the other to achieve final balancing

D. Not applying any coating for balance

Balancing after coating hinges on how coating changes the blade weights. When you apply protective coating, the two blades may not gain weight equally, creating an imbalance. To reach final balance, you adjust by adding more protective coating to one blade (the lighter side) so the weight distribution becomes equal. After applying the extra coating, you recheck the balance and, if needed, make further small adjustments. This approach lets you preserve protection while fine-tuning the propeller's balance. Applying coating evenly across both blades wouldn't guarantee balance if there's an initial or thickness-related discrepancy. Removing coating defeats the protective purpose and isn't the method used to achieve balance, and not applying coating at all ignores the protective requirement and won't address any imbalance created by other means.

3. Who is primarily responsible for maintaining an aircraft in airworthy condition?

A. the pilot

B. the mechanic

C. the FAA

D. the owner or operator

The owner or operator has the ultimate obligation to keep an aircraft airworthy. Airworthiness is maintained by ensuring the aircraft meets its design and continues to comply with required inspections, airworthiness directives, and preventive maintenance. The owner or operator arranges and funds maintenance, ensures work is done by qualified technicians in accordance with approved data, and maintains the aircraft records that prove ongoing compliance. While the mechanic performs the actual maintenance and the FAA provides oversight and on-sight inspections, they do not carry the ongoing, overall responsibility for the aircraft's airworthiness. The pilot in command must assess the aircraft's condition before every flight, but that preflight check supplements, rather than replaces, the owner's continuing responsibility to maintain airworthiness.

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4. During pre-maintenance electrical safety checks, what is the purpose of lockout/tagout power sources?

A. To identify the task

B. To verify de-energization

C. To prevent re-energization of power sources during maintenance

D. To wear PPE

Lockout/tagout power sources are used to prevent re-energization of equipment during maintenance. By isolating the electrical supply and applying a lock, the energy source cannot be re-energized while work is being done. A tag provides a clear warning and identifies who placed the lock, ensuring others do not restore power. Verifying that the system is de-energized is an important step, but the main purpose of lockout/tagout is to keep that energy from coming back on during maintenance. The other options describe related activities (planning the task or using PPE) but do not accomplish the protection goal of preventing re-energization.

5. If voltage remains constant and resistance doubles, what happens to current according to Ohm's Law?

A. Current doubles.

B. Current remains the same.

C. Current halves.

D. Current increases by four times.

With a fixed voltage, current is determined by I = V/R, so it varies inversely with resistance. If you double the resistance, the current must drop by the same factor. For example, using a constant 12 V source: at 6 Ω, current is 12/6 = 2 A. If the resistance increases to 12 Ω, current becomes 12/12 = 1 A. So the current is halved. This is why the correct result is that current halves. The other options would require the current to increase or stay the same, which contradicts the inverse relationship between current and resistance when voltage is constant.

6. Which elements are approved by an aircraft's type certificate?

A. weight and balance data

B. type design and operating limits

C. color scheme

D. tooling list

The type certificate confirms the aircraft's official design and the conditions under which it may be operated. It approves the type design—the configuration, systems, equipment, and performance characteristics that make up the aircraft—and the operating limits, which lay out the safety parameters for use, such as weight/center of gravity ranges, maximum speeds, and other restrictions. This pairing establishes what the manufacturer designed and what pilots are authorized to operate. Cosmetic details like the color scheme aren't part of the airworthiness approval, and a tooling list is related to production or maintenance resources rather than the aircraft's approved design and operation. Weight and balance data are encompassed by the operating limits, which are included in the certificate data, but the fundamental items approved by the type certificate are the type design and the operating limits.

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7. Where are the high and low pitch stops of a Hamilton Standard constant-speed propeller located?

A. In the hub

B. In the governor

C. In the nacelle

D. In the counterweight assembly

In a Hamilton Standard constant-speed propeller, the limits for blade angle travel—the high and low pitch stops—are built into the counterweight assembly. As the governor commands a change in pitch, hydraulic pressure moves the blades, but the actual extremes of motion are limited by surfaces in the counterweight assembly. This arrangement guarantees safe, well-defined maximum coarse (high pitch) and fine (low pitch) angles and helps ensure reliable feathering and protection against over-travel, even if the hydraulic system or governor behavior changes. The stops aren't located in the hub or nacelle, and the governor provides the control signal rather than the physical limits.

8. How do you verify zero voltage before working on a live electrical circuit?

A. De-energize the circuit, then verify with a properly rated test instrument against a known reference/ground.

B. Turn on the power and measure with a multimeter.

C. Only touch the conductor to feel for voltage.

D. Discharge the battery and assume it's safe.

The important idea is to make sure all energy is removed before you touch anything, and then prove there's no potential present with a proper test tool. Start by de-energizing the circuit so power is removed, and release or discharge any stored energy that could still be present in capacitors or other components. After that, verify zero volts with a test instrument that is rated for the voltage and environment and that uses a known reference or ground for measurement. This confirms there is no voltage between the conductors you'll touch and the reference point, preventing shocks or arc flashes. Relying on turning the power on to check for voltage is dangerous because you'd be measuring a live condition, not a safe one. Feeling for voltage by touching a conductor isn't reliable or safe, since voltage isn't detectable by touch and you can't gauge a circuit's state that way. Assuming safety after simply discharging a battery ignores other energy sources and potential stored energy in the system, which can still pose a shock risk.

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9. What is used to record and approve for return to service major alterations and repairs?

A. FAA form 337

B. logbook entry

C. airworthiness certificate

D. service bulletin

For major alterations and repairs, the official way to record what was done and to authorize the aircraft to return to service is FAA Form 337. This form captures the specifics of the work, ties it to the approved data (like an STC, field approval, or other approved data), and includes a statement that the work complies with the applicable regulations and is safe to return to service. It must be completed by the person performing the work, signed by the mechanic and the supervising inspector or repair station, and then submitted to the FAA with a copy kept in the aircraft's records. Only after this form has been reviewed and approved does the aircraft regain its standing to fly. A logbook entry records maintenance activity, but it does not serve as the official approval for return to service for major alterations or repairs. An airworthiness certificate is the ongoing proof of eligibility to fly, not the record of a specific alteration or its approval. A service bulletin is a manufacturer's recommendation or instruction, not the official authorization for returning the aircraft to service after a major alteration or repair.

10. Who may zero-time an engine after rebuilding it?

A. the engine manufacturer

B. a certified repair station

C. the aircraft owner

D. the FAA

Zero-time means resetting the engine's hours-in-service to zero after a rebuild or remanufacture, so it starts its life from a fresh baseline. The authority to declare that status lies with the engine manufacturer, who certifies that the rebuilt unit meets factory specifications and is equivalent to a new engine. A certified repair station can overhaul or rebuild, but they don't have the independent authority to assign zero-time unless the manufacturer has provided the proper authorization and documentation. The FAA enforces airworthiness, but zero-time designation comes from the manufacturer (often via approved facilities acting under the manufacturer's authority), not from the owner or the FAA.

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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:

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

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