

FAA A&P Mechanics Practice Test (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. How many watts are in one horsepower?**
 - A. 500 watts**
 - B. 746 watts**
 - C. 1,000 watts**
 - D. 1,200 watts**
- 2. When defects are found during an inspection under FAR 91.169, what type of entry is required?**
 - A. Only a general statement about the inspection**
 - B. A signed list of defects and the type of inspection**
 - C. A verbal notification to the aircraft owner**
 - D. The date of the next scheduled inspection**
- 3. Why is the location of the CG critical for aircraft safety?**
 - A. It helps determine fuel capacity**
 - B. It affects the aerodynamic performance of the aircraft**
 - C. It signifies the maximum gross weight**
 - D. It is irrelevant to flight operations**
- 4. Which of the following are the three states of matter?**
 - A. Solids, gases, and vapors**
 - B. Solids, liquids, and gases**
 - C. Liquids, vapors, and plagues**
 - D. Solids, fluids, and elements**
- 5. What document must be completed, signed, and dated to acknowledge minor aircraft repairs?**
 - A. FAA Form 404**
 - B. FAA Form 337**
 - C. Aircraft Maintenance Log**
 - D. FAA Maintenance Record Form**
- 6. What are the three basic parts of a lever?**
 - A. Force, lever arm, and pivot**
 - B. Fulcrum, force or effort, and resistance**
 - C. Resistance, effort, and angle**
 - D. Pivot, load, and energy**

- 7. What is the most important law applicable to the study of electricity?**
- A. Kirchhoff's Law**
 - B. Ohm's Law**
 - C. Faraday's Law**
 - D. Newton's Law**
- 8. What is the common safety risk of using contaminated gasoline in a reciprocating engine?**
- A. Improving fuel efficiency**
 - B. Risk of operational failure due to mixture imbalance**
 - C. Potential safety hazards leading to engine failure**
 - D. No issues as long as proper filtration is used**
- 9. What can result from overtightening a flareless tube fitting?**
- A. The sleeve will loosen and cause leakage**
 - B. The tube will wear out faster**
 - C. The cutting edge will cut too deeply into the tube**
 - D. The fitting will fracture and break**
- 10. What is one kilowatt equivalent to in standard units?**
- A. 100 watts**
 - B. 500 watts**
 - C. 1,000 watts**
 - D. 750 watts**

Answers

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

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Explanations

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1. How many watts are in one horsepower?

- A. 500 watts
- B. 746 watts**
- C. 1,000 watts
- D. 1,200 watts

One horsepower is defined as being equivalent to 746 watts. This conversion is based on the standard measurement used in mechanical and electrical contexts. The Japanese engineer James Watt coined the term "horsepower" in the 18th century, and he calculated this figure as the amount of energy needed to perform work at a specific rate, allowing for a standardized way to compare the power of engines and motors to the work output of horses. Understanding this relation between horsepower and watts is crucial, particularly in fields such as mechanical engineering and aviation, where precise calculations of power output are necessary for engine performance assessments, power transmissions, and overall efficiency ratings. For example, when evaluating an aircraft engine's output, knowing that one horsepower equals 746 watts can help technicians and engineers determine the power capabilities when converting between units in technical calculations.

2. When defects are found during an inspection under FAR 91.169, what type of entry is required?

- A. Only a general statement about the inspection
- B. A signed list of defects and the type of inspection**
- C. A verbal notification to the aircraft owner
- D. The date of the next scheduled inspection

In accordance with FAR 91.169, when defects are found during an inspection, it is essential to provide a signed list of the defects identified along with the type of inspection being conducted. This requirement ensures that there is a clear and documented understanding of the aircraft's condition and any necessary repairs or maintenance that are needed. The signed list serves as a formal record that can be referenced by both the maintenance personnel and the aircraft owner, facilitating better communication regarding the aircraft's airworthiness status. Having a detailed list that includes both the defects and the type of inspection enhances transparency and accountability in the maintenance process. This documentation is crucial not only for compliance with regulatory requirements but also for ensuring the safety and reliability of the aircraft moving forward. Proper documentation can also help in tracking recurring issues or deficiencies in the aircraft over time, allowing for better maintenance strategies to be implemented.

3. Why is the location of the CG critical for aircraft safety?

- A. It helps determine fuel capacity
- B. It affects the aerodynamic performance of the aircraft**
- C. It signifies the maximum gross weight
- D. It is irrelevant to flight operations

The location of the center of gravity (CG) is crucial for aircraft safety because it significantly affects the aerodynamic performance of the aircraft. The CG determines how the aircraft will respond to control inputs and how it behaves in flight. If the CG is too far forward or too far aft, it can lead to undesirable flight characteristics such as poor handling, increased stall risk, or difficulty in recovering from a stall. For example, if the CG is too far forward, the aircraft may become nose-heavy, which can result in requiring more elevator input to maintain level flight and potentially leading to increased stall speeds. Conversely, a CG that is too far aft can make the aircraft tail-heavy, which can cause stability issues and make it difficult to control. Ensuring the CG is within specified limits is fundamental to achieving optimal stability, control, and performance, which ultimately contributes to the overall safety of the flight. Properly managing the CG allows pilots to maintain the aircraft's design performance and handling characteristics throughout various phases of flight.

4. Which of the following are the three states of matter?

- A. Solids, gases, and vapors
- B. Solids, liquids, and gases**
- C. Liquids, vapors, and plagues
- D. Solids, fluids, and elements

The three states of matter are indeed solids, liquids, and gases. This classification is fundamental in understanding the physical properties and behaviors of substances. Solids have a definite shape and volume due to closely packed particles that vibrate but do not move freely. This stability in structure allows solids to maintain their shape under various conditions. Liquids, on the other hand, have a definite volume but take the shape of their container. The particles in a liquid are closer than in a gas but are still able to move around, which allows liquids to flow. Gases have neither a definite shape nor a definite volume. The particles are widely spaced and move freely at high speeds, allowing gases to expand and fill their containers completely. Understanding these states is critical in fields such as physics and chemistry, where the behavior of materials is analyzed based on their state of matter. This knowledge is essential in various applications, including those relevant to aviation and mechanical work. The other options mentioned do not adequately represent the three foundational states of matter. Vapors and plagues introduce terms that are either too specific or not universally recognized states of matter in the traditional scientific context. Thus, solids, liquids, and gases stand as the correct classification.

5. What document must be completed, signed, and dated to acknowledge minor aircraft repairs?

- A. FAA Form 404**
- B. FAA Form 337**
- C. Aircraft Maintenance Log**
- D. FAA Maintenance Record Form**

The completion, signing, and dating of FAA Form 337 is essential for documenting major repairs or alterations to an aircraft. This form serves as an official record submitted to the FAA, providing transparency regarding any significant changes made to the aircraft's structure, systems, or components. When a minor repair occurs, the maintenance record is generally updated in conjunction with the FAA Form 337. This form ensures that the maintenance history is properly logged and that the work complies with the regulations set forth by the FAA, reinforcing safety and reliability within aviation operations. Using this form helps maintain an accurate and up-to-date record of the aircraft's maintenance status, which is crucial for regulatory compliance and for tracking any changes that could affect the aircraft's airworthiness.

6. What are the three basic parts of a lever?

- A. Force, lever arm, and pivot**
- B. Fulcrum, force or effort, and resistance**
- C. Resistance, effort, and angle**
- D. Pivot, load, and energy**

The three basic parts of a lever are the fulcrum, force (or effort), and resistance. The fulcrum is the pivot point around which the lever rotates. It serves as the axis of movement and is crucial in determining how the lever functions. The force or effort is the input applied to the lever in order to move the load, while resistance refers to the load or weight being lifted. Understanding how these three components interact is essential for leveraging mechanical advantage in various applications, whether in aviation maintenance or in general mechanics. This combination of fulcrum, effort, and resistance clearly outlines the fundamental roles that each part plays in the operation of a lever, thus reinforcing why this answer is the correct choice.

7. What is the most important law applicable to the study of electricity?

- A. Kirchhoff's Law
- B. Ohm's Law**
- C. Faraday's Law
- D. Newton's Law

Ohm's Law is fundamental to the understanding of electricity because it defines the relationship between voltage, current, and resistance. According to this law, the current flowing through a conductor between two points is directly proportional to the voltage across the two points and inversely proportional to the resistance of the conductor. This relationship can be expressed mathematically as $(V = I \times R)$, where (V) is voltage, (I) is current, and (R) is resistance. The significance of Ohm's Law lies in its wide applicability in electrical circuits, allowing technicians and engineers to calculate how much current will flow in a circuit when a certain voltage is applied and the resistance is known. This is crucial in both the design and troubleshooting of electrical systems, making it an essential law for anyone studying electricity or working as an A&P mechanic. In contrast, while Kirchhoff's Law deals with current and voltage in complex circuits and Faraday's Law relates to electromagnetic induction, they build on the principles set forth by Ohm's Law. Newton's Law, while essential in physics, pertains primarily to mechanics rather than electricity. This makes Ohm's Law the cornerstone for studying and applying electrical principles effectively.

8. What is the common safety risk of using contaminated gasoline in a reciprocating engine?

- A. Improving fuel efficiency
- B. Risk of operational failure due to mixture imbalance
- C. Potential safety hazards leading to engine failure**
- D. No issues as long as proper filtration is used

Using contaminated gasoline in a reciprocating engine poses significant safety risks, particularly the potential for engine failure. Contamination can arise from water, sediment, or other substances that compromise the fuel's integrity and combustion qualities. Such impurities can disrupt the fuel-air mixture that is essential for optimal engine performance. When the fuel is contaminated, it can lead to incomplete combustion, which may result in knocking, overheating, or misfiring. In more severe cases, contaminated fuel may lead to a total operational failure of the engine while in flight, which can endanger both the aircraft and its occupants. Therefore, ensuring that the fuel is free from contaminants is crucial for the reliable operation of the engine, making it essential for safety in aviation. Options that imply that contaminated fuel might improve efficiency, lead to a mixture imbalance, or that filtration would address all issues do not adequately recognize the fundamental risks associated with using any form of compromised fuel in flight operations. Proper fuel management and quality assurance are vital components of aviation safety practices.

9. What can result from overtightening a flareless tube fitting?

- A. The sleeve will loosen and cause leakage
- B. The tube will wear out faster
- C. The cutting edge will cut too deeply into the tube**
- D. The fitting will fracture and break

Overtightening a flareless tube fitting can indeed lead to the cutting edge damaging the tube itself. Flareless fittings are designed with a cutting edge that bites into the tube when the fitting is tightened. This creates a seal that prevents leaks. However, if excessive force is applied, the cutting edge can cut too deeply into the tube material, compromising its integrity. This can lead to issues such as weakened structure, potential failure of the fitting under pressure, or even catastrophic leaks. In contrast to this, other options suggest different failure modes that are less relevant to the mechanics of flareless fittings. For instance, while leakage is a concern with improper fitting, it generally arises from a failure to seal properly, not specifically from overtightening causing deep cuts. Similarly, wearing out of the tube or fracturing of the fitting might occur under different stress conditions or from material fatigue, but the primary risk associated with overtightening is the risk of excessive cutting. Thus, focusing on the consequences of overtightening highlights the critical nature of applying the correct torque to maintain the integrity of the fitting and ensure proper operation.

10. What is one kilowatt equivalent to in standard units?

- A. 100 watts
- B. 500 watts
- C. 1,000 watts**
- D. 750 watts

One kilowatt is equivalent to 1,000 watts. This is based on the metric system where the prefix "kilo" denotes a factor of one thousand. In electrical terms, a kilowatt (kW) measures the rate of energy conversion or transfer and is critical in understanding power consumption in various applications, especially in electrical systems and devices. The definition directly corresponds to the relationship between the two units, making it essential for technicians and engineers to know this conversion for tasks such as sizing generators, calculating load requirements, and ensuring compliance with electrical standards.

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://faaandpmechanics.examzify.com>

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

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