FAA A&P MECHANICS 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. How many cells does a 24 volt lead-acid battery contain?

A. 6 cells

B. 8 cells

C. 10 cells

D. 12 cells

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

A. 100 watts

B. 500 watts

C. 1,000 watts

D. 750 watts

3. What does an electrical circuit consist of?

A. A resistor and a battery

B. A source of EMF, resistance, and conductors

C. A switch and a load

D. A voltage source and a capacitor

4. What effect does a capacitor produce in an AC circuit?

A. It generates voltage

B. It opposes changes in voltage

C. It stores electrical energy

D. It measures current

5. What should be used for a visual inspection of a weld?

A. A handheld microscope

B. A magnifying glass of at least ten power

C. A digital camera

D. An optical comparator

6. What does "clearance" refer to in aircraft drawings?

A. The overall dimensions of a part

B. The dimension for fits between moving parts

C. The maximum size a part can be

D. The distance from a part to an obstruction

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7. What should you do after removing corrosion from an aircraft surface?

A. Apply a new layer of paint

B. Inspect for structural damage

C. Restore protective surface films

D. Leave it untreated

8. Which lines are used on aircraft drawings to show alternate positions?

A. Medium width solid lines

B. Medium width dashed lines

C. Long dash lines

D. Thick dashed lines

9. What is the relationship defined by Ohm's Law?

A. Power equals voltage plus resistance

B. Current equals voltage divided by resistance

C. Voltage equals resistance multiplied by current

D. Resistance equals current plus voltage

10. What are five common forms of corrosion?

A. Surface, pitting, galvanic, crevice, and fretting corrosion

B. Surface, intergranular, stress, fretting, and dissimilar metal corrosion

C. Galvanic, surface, oxidizing, reducing, and fretting corrosion

D. Intergranular, galvanic, active, passive, and fretting corrosion

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Answers

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

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Explanations

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1. How many cells does a 24 volt lead-acid battery contain?

A. 6 cells

B. 8 cells

C. 10 cells

D. 12 cells

A 24-volt lead-acid battery typically contains six cells connected in series. Each lead-acid cell has a nominal voltage of about 2 volts, so when you connect six of these cells together, the total voltage adds up to 12 volts. Therefore, to achieve a 24-volt battery configuration, you would actually need two 12-volt lead-acid battery packs connected in series, resulting in a total of twelve cells (6 from each pack). In essence, each of the six cells contributes to the battery's overall voltage, and when two sets of six cells are combined, they produce the desired 24 volts. This design is common in applications requiring higher voltages, assuring reliable performance in various mechanical and electrical systems.

2. 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.

3. What does an electrical circuit consist of?

A. A resistor and a battery

B. A source of EMF, resistance, and conductors

C. A switch and a load

D. A voltage source and a capacitor

An electrical circuit fundamentally consists of three main components: a source of electromotive force (EMF), resistance, and conductors. The source of EMF, such as a battery or generator, provides the necessary voltage that drives the electric current through the circuit. The resistance can be any component that opposes the flow of current, such as resistors, loads, or any other devices in the circuit. Conductors, typically wires, allow the current to flow between the source of EMF and the load. This basic structure enables a circuit to function as intended, allowing for the flow of electricity that powers devices, lights, or other components. Understanding this composition is crucial for troubleshooting, designing, or analyzing electrical systems in various applications, particularly in aviation where reliable electrical circuits are vital for safety and functionality.

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4. What effect does a capacitor produce in an AC circuit?

A. It generates voltage

B. It opposes changes in voltage

C. It stores electrical energy

D. It measures current

In an AC circuit, a capacitor is primarily known for its ability to store electrical energy. Capacitors are devices that hold electric charge, storing energy in the electric field created between their plates. When a voltage is applied across a capacitor, it charges up, allowing it to accumulate energy. This energy can then be released back into the circuit when needed, which is particularly useful in various applications such as smoothing out fluctuations in voltage, filtering signals, and providing energy during brief dips in supply. The storage capability and subsequent release of energy is a fundamental property of capacitors and is crucial for their function in alternating current circuits. Capacitors do not generate voltage themselves, nor do they measure current; rather, they maintain the voltage across their plates while allowing an alternating current to flow through them, effectively opposing rapid changes in voltage through their charging and discharging cycles. This unique characteristic also allows them to phase shift the current, which can be essential in various applications like tuning circuits or stabilizing voltage levels.

5. What should be used for a visual inspection of a weld?

A. A handheld microscope

B. A magnifying glass of at least ten power

C. A digital camera

D. An optical comparator

Using a magnifying glass of at least ten power is appropriate for a visual inspection of a weld because it allows the inspector to closely examine the weld for surface defects, inconsistencies, and other critical indicators of quality. A ten power magnification provides sufficient detail to identify common welding flaws, such as cracks, porosity, and incomplete fusion, without being too cumbersome. Visual inspections are often the first step in ensuring the integrity of a welded joint, and using a magnifying glass enables inspectors to effectively assess the surface condition directly and efficiently. The magnifying glass is also portable and easy to use, making it a practical choice for on-site inspection tasks. In contrast, while a handheld microscope might provide greater magnification, it may not be as suitable for overall weld inspections due to a limited field of view and potential difficulty in handling during on-site evaluations. A digital camera could document the condition but would not directly aid in real-time inspection. An optical comparator, typically used for measuring and analyzing dimensions rather than a direct surface inspection, may not be easily accessible or practical in all situations involving weld evaluations.

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6. What does "clearance" refer to in aircraft drawings?

A. The overall dimensions of a part

B. The dimension for fits between moving parts

C. The maximum size a part can be

D. The distance from a part to an obstruction

In the context of aircraft drawings, "clearance" specifically refers to the dimension for fits between moving parts. This means it involves the necessary space that allows components to move freely without interference. It ensures that moving parts can operate effectively without risk of binding or damage due to contact. Proper clearance is crucial for maintaining the aircraft's functionality and safety, particularly in systems where parts have to rotate or slide relative to one another, such as in engine components or control surfaces. The other options, while related to dimensions and sizes of parts, do not accurately define "clearance" as it specifically pertains to the gaps required for moving parts. Overall dimensions and maximum size pertain more to the size and scale of a part, while the distance from a part to an obstruction is concerned with spatial relationships but doesn't focus specifically on the allowances required for the operation of moving components.

7. What should you do after removing corrosion from an aircraft surface?

A. Apply a new layer of paint

B. Inspect for structural damage

C. Restore protective surface films

D. Leave it untreated

After removing corrosion from an aircraft surface, it is essential to restore protective surface films. This step is crucial because corrosion protection is key to maintaining the integrity and longevity of aircraft materials. When corrosion is removed, the underlying surface can be exposed to environmental factors, which may lead to re-corrosion or further degradation if not treated properly. Restoring protective surface films can include applying protective coatings, sealants, or other treatments that prevent moisture and contaminants from penetrating the metal. These protective measures ensure that the aircraft surface remains resilient against future corrosion and adheres to safety standards. While applying a new layer of paint may seem like an appropriate action, it often comes after ensuring that the surface is adequately treated and protected. Inspecting for structural damage is important as well, but it typically should follow the initial corrosion removal before any protective coatings are reapplied. Leaving the surface untreated would increase the risk of corrosion returning, compromising the safety and structural integrity of the aircraft.

8. Which lines are used on aircraft drawings to show alternate positions?

A. Medium width solid lines

B. Medium width dashed lines

C. Long dash lines

D. Thick dashed lines

Medium width dashed lines are specifically used on aircraft drawings to indicate alternate positions. This is a standardized practice in technical drawings, including aircraft schematics, where different configurations or offsets of components need to be depicted clearly. The use of dashed lines helps differentiate these alternate positions from other types of lines, such as solid or thicker lines, which are used to show more permanent or fixed elements. This distinction is crucial for mechanics and engineers when interpreting designs, ensuring that they accurately understand how components may be adjusted or repositioned during assembly or maintenance.

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9. What is the relationship defined by Ohm's Law?

A. Power equals voltage plus resistance

B. Current equals voltage divided by resistance

C. Voltage equals resistance multiplied by current

D. Resistance equals current plus voltage

The relationship defined by Ohm's Law describes how voltage, current, and resistance interact in an electrical circuit. According to Ohm's 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 is mathematically expressed as: Current (I) = Voltage (V) / Resistance (R) By emphasizing the correct answer, this formula clearly indicates that, for a constant resistance, increasing the voltage results in an increase in current, while increasing the resistance leads to a decrease in current for a given voltage. Understanding this relationship is fundamental in electrical theory and helps in various applications, such as troubleshooting and designing electrical circuits, ensuring that a mechanic can effectively analyze and manage electrical systems in aviation.

10. What are five common forms of corrosion?

A. Surface, pitting, galvanic, crevice, and fretting corrosion

B. Surface, intergranular, stress, fretting, and dissimilar metal corrosion

C. Galvanic, surface, oxidizing, reducing, and fretting corrosion

D. Intergranular, galvanic, active, passive, and fretting corrosion

The identification of five common forms of corrosion is fundamental for understanding how materials degrade over time in aviation environments. The correct choice lists intergranular, stress, fretting, and dissimilar metal corrosion, each of which has distinctive characteristics and mechanisms. Intergranular corrosion occurs along the grain boundaries of metals, which can weaken the material by promoting localized attack when conditions such as temperature and composition cause the boundaries to become susceptible to corrosion. This form is especially problematic in heat-treated alloys. Stress corrosion cracking involves the combined influence of tensile stress and a corrosive environment, leading to unexpected failures at stresses lower than the material's yield strength. It is critical for A&P mechanics to recognize this type of corrosion, as it can lead to catastrophic failures in critical components. Fretting corrosion is a result of small, relative movements between contacting surfaces under load. This movement can disturb protective oxide layers, allowing corrosion to initiate and propagate despite the absence of significant movement or a corrosive fluid. Dissimilar metal corrosion occurs when two different metals are in electrical contact in the presence of an electrolyte, resulting in galvanic corrosion where one metal becomes anodic and deteriorates faster than the cathodic metal. This is particularly important in aircraft maintenance as many components are

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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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