

Flight Engineer Written FEX Practice Exam (Sample)

Study Guide



Everything you need from our exam experts!

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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	16

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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 the benefit of the equalizing circuit in generator load sharing?**
 - A. It randomizes the generator load**
 - B. It prevents generator overload**
 - C. It enhances generator speed**
 - D. It automatically shuts down excess generators**

- 2. What type of terminal is satisfactory for general electrical systems?**
 - A. Terminal blocks**
 - B. Swaged or crimped type terminals**
 - C. Soldered terminals**
 - D. Wire nuts**

- 3. Which items will be affected if covers over the pitot probes are not removed?**
 - A. Landing gear indicators**
 - B. Flight recorder, airspeed, and autopilot**
 - C. Navigation systems only**
 - D. Cabin pressure alarms**

- 4. What is the primary source of directional stability for an airplane?**
 - A. Horizontal stabilizer**
 - B. Vertical tail**
 - C. Wing design**
 - D. Control surfaces**

- 5. What are the three sources from which ventilating air may come?**
 - A. A blower, ram air inlet, or cabin compressors**
 - B. A blower, water inlet, or battery**
 - C. Only from the cabin compressors**
 - D. Ram air inlet, battery, or cabin heater**

- 6. What general effect does altitude above the tropopause have on engine efficiency?**
- A. It improves combustion efficiency**
 - B. It leads to lower specific fuel consumption**
 - C. It results in a deterioration of overall engine efficiency**
 - D. It enhances thrust performance**
- 7. When the elevator moves down, what direction does the trim tab move to help achieve this?**
- A. It moves down**
 - B. It moves up**
 - C. It remains neutral**
 - D. It moves left**
- 8. How does under-inflation of tires affect tread wear?**
- A. Tread wears more in the center**
 - B. Tread wears evenly across all areas**
 - C. Tread wears more on the shoulders**
 - D. Tread shows no significant wear**
- 9. What should be avoided during the application of deicing fluid to prevent forcing ice into control areas?**
- A. Spraying fluid under high pressure**
 - B. Spraying directly at flight controls**
 - C. Not spraying at all**
 - D. Using diluted mixtures**
- 10. What characteristic allows a wattmeter to measure both AC and DC power?**
- A. The scale calibration**
 - B. The direction of the electrical flow**
 - C. The type of resistors used**
 - D. The power source frequency**

Answers

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

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Explanations

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1. What is the benefit of the equalizing circuit in generator load sharing?

- A. It randomizes the generator load
- B. It prevents generator overload**
- C. It enhances generator speed
- D. It automatically shuts down excess generators

In generator load sharing, the equalizing circuit plays a critical role in managing the distribution of electrical load among multiple generators running in parallel. The primary benefit of the equalizing circuit is its ability to prevent generator overload. When multiple generators share the load, it is essential that each generator shares its portion of the load equally, as uneven load distribution can lead to some generators being loaded more heavily than others. This situation may result in overload conditions for those generators, potentially causing damage or failure. The equalizing circuit helps to balance the load by adjusting the output of each generator according to its capacity and the total demand on the system. By ensuring that no single generator is tasked with more than it can handle, the equalizing circuit enhances operational reliability and longevity of the generators. Additionally, it effectively allows for the optimization of performance across all units, leading to a stable and efficient power supply.

2. What type of terminal is satisfactory for general electrical systems?

- A. Terminal blocks
- B. Swaged or crimped type terminals**
- C. Soldered terminals
- D. Wire nuts

Swaged or crimped type terminals are considered satisfactory for general electrical systems due to their reliability and efficiency in providing a secure electrical connection. These terminals create a strong mechanical bond to the wire through a process of compression, ensuring minimal resistance and lowered risk of disconnection due to vibration or movement. This makes them particularly advantageous in environments where durability and stability are essential. Additionally, crimped terminals typically offer a good balance between ease of installation and long-term performance. They can accommodate various wire sizes and types, making them versatile in different applications. Unlike soldered terminals, which may require additional skill and tools to ensure a proper joint, crimped connections can be quickly and easily created in the field, promoting safety and operational readiness. While terminal blocks do provide effective means for managing multiple connections, they may not be as compact or robust for all specific applications. Soldered terminals can yield strong connections but may introduce risks such as cold solder joints or component overheating during installation. Wire nuts, on the other hand, are more suited for low-voltage applications and can be less secure than crimped connections, especially in dynamic environments. Thus, swaged or crimped type terminals stand out as the preferred choice in general electrical systems for their strength.

3. Which items will be affected if covers over the pitot probes are not removed?

- A. Landing gear indicators**
- B. Flight recorder, airspeed, and autopilot**
- C. Navigation systems only**
- D. Cabin pressure alarms**

When the covers over the pitot probes are not removed, it primarily affects the flight recorder, airspeed indicator, and autopilot systems. The pitot probes are essential for measuring airspeed because they capture dynamic air pressure, which is crucial for the operation of these instruments. The flight recorder relies on accurate airspeed data to log performance information, which is vital for analyzing the aircraft's performance during flight. Similarly, the airspeed indicator needs data from the pitot probes to display the correct airspeed to the pilots, allowing them to maintain appropriate control of the aircraft. The autopilot system also utilizes airspeed for various functions, such as maintaining altitude and speed during flight. Other systems, like navigation systems or cabin pressure alarms, do not rely directly on data from the pitot probes, making them less affected in this scenario.

4. What is the primary source of directional stability for an airplane?

- A. Horizontal stabilizer**
- B. Vertical tail**
- C. Wing design**
- D. Control surfaces**

The primary source of directional stability for an airplane is the vertical tail. The vertical stabilizer, which is part of the vertical tail structure, is crucial in providing directional stability by preventing unwanted yawing motions. When the aircraft experiences a side slip due to wind or other factors, the shape and position of the vertical stabilizer create a restoring force that helps to realign the aircraft with its flight path. This is achieved through the aerodynamic forces acting on the vertical tail, which enhance stability and control in the yaw axis. While the horizontal stabilizer contributes significantly to longitudinal stability and control, and wing design affects overall flight characteristics, it is the vertical tail that directly addresses the airplane's ability to maintain a straight and level flight when disturbed laterally. The control surfaces, such as rudders and ailerons, play a role in maneuverability and control but are not the primary stabilizers. Instead, they make adjustments to the flight path rather than contributing to inherent directional stability.

5. What are the three sources from which ventilating air may come?

- A. A blower, ram air inlet, or cabin compressors**
- B. A blower, water inlet, or battery**
- C. Only from the cabin compressors**
- D. Ram air inlet, battery, or cabin heater**

The correct answer is based on the various mechanisms through which ventilating air is introduced into an aircraft's cabin or cockpit. The three sources mentioned—blower, ram air inlet, and cabin compressors—each play a crucial role in providing fresh air and maintaining appropriate cabin pressure. A blower is a device used to mechanically force air into the cabin, ensuring that it circulates effectively, especially during times when natural airflow may be insufficient. Ram air inlets capitalize on the aircraft's forward motion to draw in fresh air, utilizing the speed of the aircraft to enhance the volume of air intake, which is particularly beneficial during flight. Cabin compressors are essential for pressurizing the air, making it suitable for maintaining comfort and safety levels inside the aircraft at high altitudes, where external air pressure is insufficient. While other options list different components, they do not accurately reflect established sources for ventilating air. Water inlets and batteries, for example, do not contribute to cabin ventilation, and mentioning only cabin compressors overlooks the critical role of the other sources in achieving proper air circulation and pressure management. By understanding the functions of each of these sources, it becomes clear how they collectively contribute to a well-ventilated environment within an aircraft.

6. What general effect does altitude above the tropopause have on engine efficiency?

- A. It improves combustion efficiency**
- B. It leads to lower specific fuel consumption**
- C. It results in a deterioration of overall engine efficiency**
- D. It enhances thrust performance**

As aircraft ascend to higher altitudes, particularly above the tropopause, the air density decreases significantly. This lower air density means that engines receive less oxygen for combustion, which can lead to suboptimal combustion conditions. Although jet engine designs can be optimized for high-altitude flight, the reduction in air pressure impacts overall performance, often resulting in a deterioration of overall engine efficiency. While specific engine designs might compensate to some extent for these changes, generally, the physical laws governing combustion and aerodynamics mean that engines operating at these altitudes struggle more to maintain their designed performance metrics. Additionally, the effects of lower temperatures at high altitudes can also change the way engines behave, further complicating their efficiency. Thus, while some aspects of engine performance can improve under certain conditions (like thrust at optimal design altitude), the overall engine efficiency typically declines when considering factors such as combustion effectiveness and specific fuel consumption above the tropopause.

7. When the elevator moves down, what direction does the trim tab move to help achieve this?

- A. It moves down**
- B. It moves up**
- C. It remains neutral**
- D. It moves left**

When the elevator moves down, the trim tab is designed to move up. This action assists in balancing the control forces required to maintain a desired pitch attitude. The elevator controls the pitch of the aircraft, and when it is deflected downward to pitch the nose down, it creates a moment that must be counteracted to maintain control with reduced pilot effort. By having the trim tab move up, it generates an aerodynamic force that acts in opposition to the elevator's downward movement, reducing the pilot's workload. This design is key for improving the aircraft's stability and overall control, ensuring that the pilot can maintain comfort and safety without needing to exert continuous force on the controls.

8. How does under-inflation of tires affect tread wear?

- A. Tread wears more in the center**
- B. Tread wears evenly across all areas**
- C. Tread wears more on the shoulders**
- D. Tread shows no significant wear**

Under-inflation of tires leads to increased wear on the shoulders of the tire. When a tire is under-inflated, the contact patch with the road becomes larger, and more of the tire's sidewalls come into contact with the surface. This results in enhanced flexing of the tire during operation. The extra heat generated by this flexing can cause the rubber on the tire's shoulders to wear down faster than the center tread. As a result, you may observe uneven tread wear, where the edges of the tire exhibit significantly more wear than the central portion. This condition not only affects the tire's longevity but can also lead to reduced performance and safety issues, especially in terms of handling and traction. Proper tire inflation is crucial for achieving a balanced and even tread wear pattern, promoting both safety and efficiency.

9. What should be avoided during the application of deicing fluid to prevent forcing ice into control areas?

- A. Spraying fluid under high pressure**
- B. Spraying directly at flight controls**
- C. Not spraying at all**
- D. Using diluted mixtures**

The correct answer emphasizes the importance of avoiding the direct application of deicing fluid at flight controls, as this could lead to ice being forced into those control areas. When deicing fluid is applied directly onto flight controls, especially under high pressure, it can inadvertently create a situation where ice or contaminants are pushed into the mechanisms that govern those controls. This could cause malfunction or reduced effectiveness of the flight control systems, posing a risk during flight operations. In contrast, while high-pressure spraying and using diluted mixtures carry their own risks, the primary concern highlighted in the question is the potential for compromising the integrity of the flight control systems by forcing unwanted substances into them. Thus, maintaining a careful approach when applying deicing fluid is crucial to ensure both safety and operational effectiveness. Not spraying at all would not address the need to remove ice, whereas managing the technique of application is key to an effective deicing process.

10. What characteristic allows a wattmeter to measure both AC and DC power?

- A. The scale calibration**
- B. The direction of the electrical flow**
- C. The type of resistors used**
- D. The power source frequency**

A wattmeter is designed to measure electrical power accurately, regardless of whether the current is alternating current (AC) or direct current (DC). The key characteristic that allows for this versatility is its ability to measure the direction of electrical flow. In the context of power measurement, the wattmeter typically consists of two coils: one for voltage and one for current. The interaction between these coils fundamentally relies on the flow of current, which can be in either direction. For AC, the current reverses direction periodically, while for DC, the current flows in a single, consistent direction. The wattmeter effectively translates these directional flows into usable power readings for both types of current. This capacity to detect the direction of electrical flow ensures that the wattmeter can measure the instantaneous power and integrate it over time to yield total power—be it AC or DC. The calibration of the scale, the specific type of resistors used, and the frequency of the power source are important factors for accurate readings but do not inherently contribute to the wattmeter's fundamental ability to measure both AC and DC power. The critical factor remains the measurement of directional flow, enabling the wattmeter to function across different types of electrical systems.

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://flightengrfeexamzify.com>

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

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