

SIFT Army Aviation Information 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. When flying, increasing the throttle affects what aspect of helicopter performance except?
 - A. Push rate
 - B. Torque
 - C. Speed
 - D. Fuel consumption

2. Which item is NOT included in a helicopter's base empty weight?
 - A. Pilot
 - B. Engine
 - C. Optional equipment
 - D. Transmission oil

3. What will the effect be if the collective is lowered while flying straight and level, assuming all else is constant?
 - A. The helicopter's nose will pitch up
 - B. No effect on airspeed
 - C. The nose will pitch down, and airspeed will increase
 - D. The helicopter will descend rapidly

4. What should a pilot do if the heading begins to change during a vertical takeoff to a hover?
 - A. Slowly adjust the anti-torque pedals
 - B. Increase throttle to regain heading
 - C. Decrease collective to stabilize
 - D. Perform a hovering turn

5. What is the primary factor affecting a helicopter's potential energy?
 - A. The tail rotor's anti-torque force
 - B. The relative wind
 - C. The aircraft's altitude
 - D. The weight of the aircraft

6. In the context of aviation, why is it essential to understand weight and balance?
- A. It helps with navigation accuracy
 - B. It is crucial for safe aircraft operation and performance calculations
 - C. It affects fuel consumption
 - D. It determines flight route selection
7. Why is it important to study aviation information for the SIFT?
- A. It is irrelevant to the SIFT structure
 - B. It helps assess the candidate's math skills
 - C. It helps assess the candidate's knowledge relevant to flying and aviation operations
 - D. It is only important for the interview process
8. In straight and level flight, which control is primarily used to increase airspeed?
- A. Cyclic pitch control
 - B. Collective control
 - C. Anti-torque pedals
 - D. Yaw control
9. Which concept is least likely to be emphasized in an aviation math context?
- A. Multiplicative strategies for load calculations
 - B. Trigonometric functions for navigation
 - C. Calculus applications in flight dynamics
 - D. Basic arithmetic for passenger counts
10. What common maneuver can cause increased loads on a helicopter's rotor system?
- A. Steady ascent
 - B. Swift turns
 - C. Rapid descent
 - D. Controlled landings

Answers

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

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Explanations

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1. When flying, increasing the throttle affects what aspect of helicopter performance except?

A. Push rate

B. Torque

C. Speed

D. Fuel consumption

Increasing the throttle in a helicopter primarily affects several performance aspects, including torque, speed, and fuel consumption. When the throttle is increased, the engine produces more power, which increases the rotor speed, leading to greater torque. This torque is necessary to maintain balance and control in flight, especially when climbing or flying against the wind. Furthermore, an increase in engine power translates into higher speed capabilities, allowing the helicopter to gain more lift and cover ground more quickly. Fuel consumption is also directly affected because an increase in throttle results in the aircraft using more fuel to sustain the additional power output. In contrast, the push rate is not directly influenced by changes in throttle settings. The term "push rate" typically refers to the rate at which an aircraft can accelerate or climb, which is more related to factors such as aircraft weight, rotor effectiveness, and environmental conditions, rather than just throttle input. Thus, while increasing throttle enhances power and capabilities, the push rate remains relatively unaffected solely by throttle adjustments.

2. Which item is NOT included in a helicopter's base empty weight?

A. Pilot

B. Engine

C. Optional equipment

D. Transmission oil

The base empty weight of a helicopter includes all necessary components required for flight, such as the airframe, engines, and installed equipment, but it does not account for the weight of the pilot or passengers. This weight measurement is crucial for determining the helicopter's performance limits, such as payload capacity and fuel requirements. The pilot's weight is considered additional to the base empty weight, as they are not essential structural or operational components of the helicopter itself. Therefore, the correct answer is that the pilot is not included in the base empty weight. The other options consist of integral components of the helicopter. The engine is a fundamental part of the helicopter that contributes to its base empty weight. Optional equipment refers to any installed extras that can vary according to the helicopter's configuration, but if they are installed, they become part of that weight measurement. Transmission oil, necessary for the operation of the helicopter's drivetrain, is also included in the base empty weight, as it is an essential fluid for operational functionality.

3. What will the effect be if the collective is lowered while flying straight and level, assuming all else is constant?

- A. The helicopter's nose will pitch up
- B. No effect on airspeed
- C. The nose will pitch down, and airspeed will increase
- D. The helicopter will descend rapidly

When the collective is lowered while the helicopter is flying straight and level, the reduction in collective pitch decreases the pitch angle of the rotor blades. This action reduces the amount of lift generated by the rotor system because the rotor blades are producing less vertical thrust. Consequently, the helicopter will start to lose altitude. As the collective pitch is decreased, the helicopter's weight begins to exceed the available lift, leading the helicopter to descend. During this descent, because the rotor blades are still moving through the air, increasing the relative wind over the rotor system can result in an increase in airspeed. As the helicopter descends, the thrust vector can cause the nose of the helicopter to pitch down, which is a typical aerodynamic response when lift is decreased relative to weight. Thus, while the helicopter loses altitude, the increase in airspeed is a direct result of the aerodynamic forces at play in conjunction with the collective's adjustment, making this choice the most accurate reflection of the helicopter's behavior under those conditions.

4. What should a pilot do if the heading begins to change during a vertical takeoff to a hover?

- A. Slowly adjust the anti-torque pedals
- B. Increase throttle to regain heading
- C. Decrease collective to stabilize
- D. Perform a hovering turn

In a vertical takeoff to a hover, if the heading begins to change, the pilot needs to maintain directional control of the helicopter. One of the primary methods to control heading during hover is the use of anti-torque pedals. The anti-torque pedals are designed to counteract the torque produced by the main rotor system, which can cause the helicopter to yaw or spin. When the heading changes, a slow and measured adjustment of the anti-torque pedals will help stabilize the helicopter's yaw movement. This adjustment allows the pilot to return to the desired heading without introducing additional complications or excessive movements that could lead to a loss of control. Using the pedals smoothly is crucial, as abrupt changes can lead to overcorrection and undesirable flight dynamics. The other options, while relevant in other contexts, do not directly address the need for maintaining heading control during a hover. Increasing throttle or decreasing collective can lead to unwanted changes in altitude or speed, which may compound stability issues rather than resolve the heading deviation. Performing a hovering turn is also not directly related to correcting an unwanted heading change but rather is a maneuver used for specific directional changes.

5. What is the primary factor affecting a helicopter's potential energy?

- A. The tail rotor's anti-torque force
- B. The relative wind
- C. The aircraft's altitude
- D. The weight of the aircraft

The primary factor affecting a helicopter's potential energy is the aircraft's altitude. Potential energy in the context of aviation is calculated using the equation $PE = mgh$, where "m" stands for mass (or weight), "g" is the acceleration due to gravity, and "h" is the height above a reference point, typically the ground or sea level. As altitude increases, the height ("h") increases, thereby increasing the potential energy of the helicopter. This energy is crucial because potential energy can be converted into kinetic energy when the helicopter descends, allowing the aircraft to perform maneuvers or maintain control during flight. While weight does play a role in potential energy (since it is part of the formula), altitude is the variable that directly affects the quantity of potential energy in a more significant way, as increasing altitude raises the overall potential energy of the helicopter.

6. In the context of aviation, why is it essential to understand weight and balance?

- A. It helps with navigation accuracy
- B. It is crucial for safe aircraft operation and performance calculations
- C. It affects fuel consumption
- D. It determines flight route selection

Understanding weight and balance in aviation is fundamental for ensuring safe aircraft operation and performance calculations. Weight refers to the total mass of the aircraft including its passengers, cargo, fuel, and any additional equipment. Balance involves the distribution of this weight throughout the aircraft. Proper weight and balance are critical for several reasons. First, they directly affect the aircraft's center of gravity (CG). The CG must be within specified limits to maintain stable flight characteristics. If the CG is too far forward or aft, it can significantly impair the aircraft's handling, potentially leading to difficult control situations or even loss of control. Second, weight impacts the aircraft's performance regarding takeoff distance, climb rate, cruising speed, and landing distance. Exceeding weight limits can degrade performance, making it hard for the aircraft to become airborne and maintain altitude, and extending the landing distance required. In addition, weight and balance considerations play into compliance with regulatory requirements and standard operating procedures, which are essential for all aviation operations to ensure safety and efficiency. This understanding helps pilots conduct thorough pre-flight planning and ensures that all parameters are met for optimal performance and safety. While navigation accuracy, fuel consumption, and flight route selection are important factors in aviation, they are secondary to the critical safety implications posed by

7. Why is it important to study aviation information for the SIFT?

- A. It is irrelevant to the SIFT structure
- B. It helps assess the candidate's math skills
- C. It helps assess the candidate's knowledge relevant to flying and aviation operations
- D. It is only important for the interview process

Studying aviation information is crucial for the SIFT because it directly relates to understanding flying principles and aviation operations, which are fundamental for any candidate pursuing a career in Army aviation. This knowledge helps candidates grasp how different aircraft function, comprehend operational procedures, and be aware of airspace regulations. Such information is integral not only for passing the SIFT but also for ensuring that candidates are well-prepared for the responsibilities they will face as aviators. Mastery of aviation concepts allows candidates to demonstrate their readiness to engage in flight training and contribute effectively to aviation missions. The relevance goes beyond simply answering test questions; it cultivates situational awareness and judgment that are vital in real-world aviation environments, making an informed understanding of aviation information essential for success in both the test and future operational readiness.

8. In straight and level flight, which control is primarily used to increase airspeed?

- A. Cyclic pitch control
- B. Collective control
- C. Anti-torque pedals
- D. Yaw control

In straight and level flight, the cyclic pitch control is primarily used to increase airspeed because it directly influences the tilt of the rotor blades and, consequently, the forward thrust generated by the rotor system. By adjusting the cyclic pitch forward, the rotor blades experience a change in angle of attack, allowing the aircraft to move forward and increase its velocity. This action directs the helicopter's lift vector slightly forward, changing its flight path and resulting in an increase in airspeed without altering altitude. The other controls, such as collective control, primarily affect altitude and overall lift rather than specifically managing airspeed. The collective changes the pitch angle of all rotor blades simultaneously, which increases or decreases lift but doesn't directly correlate with forward speed changes like cyclic control does. Anti-torque pedals are responsible for controlling the helicopter's yaw, maintaining stable flight orientation, and counteracting the rotational torque generated by the main rotor, but they do not influence the forward airspeed directly. Yaw control, while essential for directional flight control, similarly does not contribute to increasing airspeed in straight and level flight.

9. Which concept is least likely to be emphasized in an aviation math context?

- A. Multiplicative strategies for load calculations
- B. Trigonometric functions for navigation
- C. Calculus applications in flight dynamics
- D. Basic arithmetic for passenger counts

In the context of aviation math, basic arithmetic is often viewed as too fundamental and straightforward for the more complex calculations necessary in aviation scenarios. While adding and subtracting passenger counts is certainly necessary for operational purposes, the other options involve more advanced mathematical concepts that are crucial for areas like navigation and flight dynamics. Multiplicative strategies are vital when calculating loads, which include weight and balance calculations essential for flight safety. Trigonometric functions play a pivotal role in navigation tasks, providing the necessary calculations for determining headings and distances, especially when using triangulation methods. Calculus finds its importance in understanding flight dynamics, which involves changes in speed and position over time—the application of derivatives and integrals can be essential in these analyses. Thus, while basic arithmetic is used daily in many operational functions, it is the least emphasized when considering the overall mathematical skills and knowledge required for aviation professionals, who are more often engaged with these higher-level calculations.

10. What common maneuver can cause increased loads on a helicopter's rotor system?

- A. Steady ascent
- B. Swiftiness in turns
- C. Rapid descent
- D. Controlled landings

The correct answer highlights that swiftiness in turns can lead to increased loads on a helicopter's rotor system due to the physics involved in executing sharp maneuvers. When a helicopter makes a quick turn, the rotor blades experience a rapid change in the load distribution. The combination of centrifugal forces and the helicopter's weight causes the rotor system to endure additional stresses, especially on the outer portions of the blades. In helicopters, the rotor system is designed to handle loads during various flight conditions, but fast turns can temporarily exceed normal operational limits. This maneuver increases the angle of attack on specific sections of the blades, resulting in additional lift and load that can strain the rotor system. Other maneuvers, such as steady ascent, controlled landings, and even rapid descent, generally involve more predictable and managed forces that do not create the same sudden variations in load as swift turns do. In these scenarios, the pilot usually maintains a consistent flight profile that the rotor system is better equipped to handle. Therefore, it is the dynamic and abrupt nature of turning swiftly that raises the load on the rotor system, distinguishing it from the other options.

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://sift-armyaviation.examzify.com>

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

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