ASSEMBLY AND RIGGING SECTIONAL AND FINAL 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.

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

1. In an articulated rotor system, what independent motions can rotor blades perform?

A. Pitch, roll, yaw

B. Tilt, twist, bend

C. Flap, feather, and lead/lag

D. Swing, sway, twist

2. Part 23 requires this to overcome jamming of flight controls

A. Backup hydraulic system

B. Redundant autopilot

C. Redundancy or separation of primary flight controls

D. Manual mechanical interlocks

3. A Gurney flap is usually found on a control surface and is used to help center it.

A. True

B. False

C. On the leading edge

D. On the wingtip

4. Where is the procedure for performing control surface rigging typically found?

A. Flight manual

B. Maintenance manual

C. Structural manual

D. Pilot's operating handbook

5. In an American-made helicopter, applying left cyclic tilts the rotor disc to the left; at which part of the rotor disc will the highest blade pitch angle occur?

A. rear of the rotor disk

B. front of the rotor disk

C. left side of the rotor disk

D. right side of the rotor disk

6. What term means changing the pitch angle of the rotor blades?

A. Feathering

B. Blade Angle

C. Tip Path

D. NR

7. What is the name of the plane through which rotor blade tips travel?

A. Blade Angle

B. Axis of Rotation

C. Disc Area

D. Tip Path Plane

8. Which is an advantage of eddy current testing?

A. high cost

B. portable

C. requires long prep

D. not sensitive

9. Which of the following is a disadvantage of ultrasound testing due to the need for a material to transmit sound?

A. Surface roughness is problematic

B. Surface of part must be accessible

C. Couplant required

D. Test method is directional

10. What term is most associated with the difference in lift on a main rotor due to forward flight?

A. Induced drag.

B. Dissymmetry.

C. Precession.

D. Coning.

Answers

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

Explanations

1. In an articulated rotor system, what independent motions can rotor blades perform?

A. Pitch, roll, yaw

B. Tilt, twist, bend

C. Flap, feather, and lead/lag

D. Swing, sway, twist

In an articulated rotor blade, there are three independent motions about the blade's hinge axes: flap, lead/lag, and feather. Flap is the up-and-down motion about the flap hinge, letting the blade respond to cyclic lift. Lead/lag is movement along the plane of rotation about the lead/lag hinge, driven by centrifugal forces and drag to accommodate inertia and drag effects. Feather is rotation about the feather axis, changing the blade pitch to control lift. These three actions are the separate degrees of freedom the hub articulation provides for each blade, enabling the blade to adapt to changing air loads while staying attached to the rotor hub. Other terms describe airplane body attitudes or nonstandard blade motions, so they don't capture the three independent hinge-driven motions that define articulated rotor blades.

2. Part 23 requires this to overcome jamming of flight controls

A. Backup hydraulic system

B. Redundant autopilot

C. Redundancy or separation of primary flight controls

D. Manual mechanical interlocks

When flight-control reliability is at risk from a jam, having multiple independent paths or physically separated control routes for the primary surfaces is essential. Redundancy means there's a second, independent way to move each primary surface, so if one path sticks or fails, the other can still steer the aircraft. Separation ensures that a single event can't simultaneously affect all control paths, reducing the chance that a jam knocks out all pitch, roll, and yaw control. This design approach is what Part 23 requires to maintain controllability after a jam. A backup hydraulic system, an autopilot redundancy, or manual interlocks don't directly guarantee continued pilot control in the same way efficient, independent control paths do.

3. A Gurney flap is usually found on a control surface and is used to help center it.

A. True

B. False

C. On the leading edge

D. On the wingtip

A Gurney flap is a small tab attached to the trailing edge of a wing section or control surface. Its purpose is to increase the camber of that surface, which raises lift and changes the aerodynamic balance or moment produced by the surface. When placed on a control surface such as an elevator or aileron, this added lift on that surface helps adjust the trim moment and can make it easier to keep the surface in its neutral, centered position during flight. It's not located on the leading edge or at the wingtip—the trailing edge is where a Gurney flap does its work. So the statement is true: it's usually found on a control surface and helps center it.

4. Where is the procedure for performing control surface rigging typically found?

A. Flight manual

B. Maintenance manual

C. Structural manual

D. Pilot's operating handbook

Rigging control surfaces is a maintenance task, so the procedure is documented where maintenance procedures live. The maintenance manual provides the exact steps, required tools, permissible tolerances, and safety precautions for adjusting linkages, hinges, and actuators to achieve correct control travel and alignment. The flight manual and pilot's operating handbook are aimed at pilots for operating the aircraft, not performing hardware adjustments. The structural manual covers the airframe's structural data and limits, not the step-by-step rigging process. So the maintenance manual is the proper source for how to perform control surface rigging.

5. In an American-made helicopter, applying left cyclic tilts the rotor disc to the left; at which part of the rotor disc will the highest blade pitch angle occur?

A. rear of the rotor disk

B. front of the rotor disk

C. left side of the rotor disk

D. right side of the rotor disk

When you push left on the cyclic, the rotor disk tilts so the lift vector points to the left. The cyclic controls are phased around the blade's azimuth so the angle of attack changes as each blade passes different positions. To produce a leftward lift while the disk is tilted, the blade in the rear portion of the disk is commanded to carry the greatest pitch, increasing lift there to support the left tilt. So, the blade at the rear of the rotor disk ends up with the highest pitch angle.

6. What term means changing the pitch angle of the rotor blades?

A. Feathering

B. Blade Angle

C. Tip Path

D. NR

Feathering is the action of changing the pitch angle of the rotor blades. In rotorcraft, this term describes rotating the blades about their longitudinal axis to set a specific pitch relative to the oncoming air, which changes the angle of attack and thus the lift or drag produced by each blade. This technique is used to position the blades for different flight conditions or to minimize drag when the rotor isn't producing useful thrust, such as during engine failure or windmilling. The other terms don't fit this action: blade angle refers to the actual pitch setting rather than the act of changing it, tip path describes the path the blade tip follows rather than pitch changes, and NR isn't a term used for blade pitch.

7. What is the name of the plane through which rotor blade tips travel?

A. Blade Angle

B. Axis of Rotation

C. Disc Area

D. Tip Path Plane

The plane in which the rotor blade tips move is called the tip path plane. As the blades rotate, they also flap up and down (and lead/lag a bit), so the tips describe a path that lies in a single plane rather than exactly along a circular path in space. That plane, defined by the tips' motion, is the tip path plane. The other terms describe different concepts: blade angle is the blade's pitch orientation, axis of rotation is the rotor's central axis, and disc area is the area of the rotor disk.

8. Which is an advantage of eddy current testing?

A. high cost

B. portable

C. requires long prep

D. not sensitive

Portability is a major advantage of eddy current testing. The equipment is typically compact and handheld, so inspections can be done directly on components in service or at the job site without taking parts to a lab or disassembling complex assemblies. The test works by inducing eddy currents in the near-surface region with a small coil; flaws disrupt those currents, and the resulting impedance changes are read instantly by the instrument. This makes the method fast, non-contact, and easy to set up, which is why portability stands out as the key benefit. It's also worth noting that the technique is quite sensitive to small surface and near-surface defects, and is not ideal for deep flaw detection. Options that imply high cost, long preparation, or no sensitivity don't match the practical strengths of this method.

9. Which of the following is a disadvantage of ultrasound testing due to the need for a material to transmit sound?

A. Surface roughness is problematic

B. Surface of part must be accessible

C. Couplant required

D. Test method is directional

Ultrasound testing hinges on delivering acoustic energy from the probe into the material, and air between the probe and the surface reflects most of the sound, preventing transmission. To avoid that, a couplant—such as a gel, oil, or water-based liquid—is applied to create a continuous medium that matches the acoustic impedance between the probe and the part. This requirement is a disadvantage because it introduces an extra material that must be applied, maintained, and removed, and it can cause contamination, residue, or compatibility issues with certain surfaces, temperatures, or cleanliness standards. The other factors—surface roughness, surface accessibility, and the directional nature of the method—are relevant to UT but don't capture the drawback inherent to needing a medium to transmit sound.

10. What term is most associated with the difference in lift on a main rotor due to forward flight?

A. Induced drag.

B. Dissymmetry.

C. Precession.

D. Coning.

Forward flight creates unequal lift across the rotor disk because the blade moving into the direction of travel (advancing) encounters faster air than the blade moving opposite (retreating). The advancing blade generates more lift, the retreating blade less, creating a difference in lift from one side of the rotor to the other. This imbalance is known as dissymmetry of lift. To keep the helicopter stable, the rotor system uses cyclic pitch and flapping to even out the lift distribution as the helicopter moves forward. The other terms—induced drag, precession, and coning—describe different aerodynamic or mechanical effects and do not specifically describe the lift difference due to forward flight.

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://assemblyrigging.examzify.com

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