

Navy Aviation Structural Mechanic (AM) 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. What provides the necessary directional control for a rotary wing aircraft?**
 - A. Main rotor**
 - B. Tail groups**
 - C. Wing flaps**
 - D. Stabilizers**

- 2. What is the primary role of a rivet set?**
 - A. To connect multiple parts**
 - B. To shape rivets**
 - C. To transmit blows from the rivet gun to the rivet**
 - D. To measure rivet dimensions**

- 3. Which structural member of the wing is responsible for absorbing bending loads during flight?**
 - A. Spar**
 - B. Rib**
 - C. Stringer**
 - D. Wingtip**

- 4. Which of the following tools is NOT used to cut metal?**
 - A. Bend tangent line**
 - B. Throatless shear**
 - C. Tinner snips**
 - D. Aviation snips**

- 5. What is the primary purpose of an auxiliary view in orthographic drawings?**
 - A. To show hidden features**
 - B. To clarify internal relationships**
 - C. To display true shape and length of inclined surfaces**
 - D. To illustrate exploded parts**

- 6. What is the first step after cleaning the metal for a flat pattern layout?**
- A. Apply a lubricant**
 - B. Draw a sketch of the flat layout**
 - C. Measure the dimensions**
 - D. Cut the metal**
- 7. Where is the side view typically located in relation to the frontal view in an orthographic drawing?**
- A. Above the frontal view**
 - B. Below the frontal view**
 - C. To the side of the frontal view**
 - D. Behind the frontal view**
- 8. What characteristic defines a flush head jo-bolt?**
- A. It is adjustable**
 - B. It is countersunk for a smooth surface**
 - C. It has a larger diameter**
 - D. It is made from composite materials**
- 9. What is a potential risk of an improper rivet joint layout?**
- A. The joint could become too flexible**
 - B. The joint may fail to meet regulatory standards**
 - C. The rivet may not be able to carry the load**
 - D. The rivet may and become loose over time**
- 10. What is the main purpose of a drill press?**
- A. For minimal drilling**
 - B. Used for heavy duty and sensitive drilling**
 - C. For drilling fragile materials only**
 - D. For fast but inaccurate drilling**

Answers

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

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Explanations

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1. What provides the necessary directional control for a rotary wing aircraft?

- A. Main rotor**
- B. Tail groups**
- C. Wing flaps**
- D. Stabilizers**

The necessary directional control for a rotary wing aircraft is provided by the tail groups, specifically the tail rotor. The tail rotor generates thrust in the opposite direction of the main rotor's torque, which counteracts the tendency of the helicopter's body to rotate in the opposite direction. By varying the pitch of the tail rotor blades, pilots can control yaw and thus steer the aircraft in the desired direction. In contrast, the main rotor primarily provides lift and is responsible for the vertical ascent and descent of the helicopter. Wing flaps and stabilizers, common on fixed-wing aircraft, play different roles in enhancing lift and stability but are not applicable to directional control in rotary wing aircraft. Their functions are specific to fixed-wing design and do not contribute to the unique mechanics of helicopters.

2. What is the primary role of a rivet set?

- A. To connect multiple parts**
- B. To shape rivets**
- C. To transmit blows from the rivet gun to the rivet**
- D. To measure rivet dimensions**

The primary role of a rivet set is to transmit blows from the rivet gun to the rivet. This is essential because the proper application of force is necessary for forming and securing rivets in place, ensuring a strong and durable joint between two or more materials. The rivet set acts as an intermediary that directs the energy from the rivet gun onto the rivet itself, which is crucial for the rivet to deform properly and achieve the desired mechanical properties. In the context of aviation structural mechanics, effective riveting is vital for the structural integrity of aircraft. Poor transfer of energy can lead to defects in the rivet installation, compromising the structure's strength and safety. Understanding this function helps technicians properly select and utilize rivet sets to ensure effective assembly of aircraft components.

3. Which structural member of the wing is responsible for absorbing bending loads during flight?

- A. Spar**
- B. Rib**
- C. Stringer**
- D. Wingtip**

The spar is the primary structural member of the wing designed specifically to absorb bending loads that occur during flight. In aviation structures, bending loads are generated by aerodynamic forces when the aircraft is in motion, particularly during maneuvers and changes in speed. The spar runs lengthwise along the wing and provides the necessary strength and stiffness to withstand these forces without failing. It acts as the main support structure, distributing the loads throughout the wing assembly. Ribs, on the other hand, serve different purposes such as maintaining the aerodynamic shape of the wing and supporting the cover skin, but they do not play the primary role in absorbing bending loads. Stringers add additional strength and help distribute loads but are secondary to the spar in handling bending forces. The wingtip is the outermost part of the wing and serves more for aerodynamic effectiveness and stability rather than structural rigidity for bending loads. Thus, the spar is the correct choice when identifying the structural member responsible for these critical loads during flight.

4. Which of the following tools is NOT used to cut metal?

- A. Bend tangent line**
- B. Throatless shear**
- C. Tinner snips**
- D. Aviation snips**

The choice of "Bend tangent line" as the answer indicates an understanding of the tools used for cutting metal in the context of airframe and structural maintenance. Bend tangent lines are not cutting tools; rather, they are reference lines used primarily in the layout and bending process of metal components. These lines assist in determining where to bend the metal to achieve the correct angles and configurations but do not actually perform any cutting. In contrast, throatless shears, tinner snips, and aviation snips are specifically designed for cutting various thicknesses and types of metal. Throatless shears can maneuver around curves and perform intricate cuts while maintaining a clean edge. Tinner snips are versatile hand tools used for cutting sheet metal, especially in detailed work. Aviation snips are designed for cutting through metal sheets, often used for more precise cutting tasks and can handle various metal gauges. Understanding the function and application of each tool is vital for effective and safe work in aviation structural mechanics.

5. What is the primary purpose of an auxiliary view in orthographic drawings?

- A. To show hidden features**
- B. To clarify internal relationships**
- C. To display true shape and length of inclined surfaces**
- D. To illustrate exploded parts**

The primary purpose of an auxiliary view in orthographic drawings is to display the true shape and length of inclined surfaces. In standard orthographic projections, certain angled or inclined surfaces can appear distorted or foreshortened, making it difficult to accurately interpret their dimensions and characteristics. By using an auxiliary view, which is projected from one of the principal views at an angle that aligns with the inclined surface, designers and engineers can accurately show the true shape and dimensions, providing a clearer representation that helps in understanding and manufacturing the part or assembly. This technique is essential in engineering and design fields, particularly in aviation structural mechanics, where precision in the representation of components is crucial for safety and functionality. The accurate portrayal of inclined surfaces can therefore facilitate better communication among engineers, machinists, and assembly teams.

6. What is the first step after cleaning the metal for a flat pattern layout?

- A. Apply a lubricant**
- B. Draw a sketch of the flat layout**
- C. Measure the dimensions**
- D. Cut the metal**

The first step after cleaning the metal for a flat pattern layout is to draw a sketch of the flat layout. This step is crucial because it allows the mechanic to visualize and plan the final piece before any physical work begins. Creating a detailed sketch establishes a clear representation of the dimensions and features that must be included in the layout. By having a sketch, the technician can ensure accurate measurements are taken and confirm that design elements are correctly represented. This preparation helps prevent mistakes during the measuring and cutting processes that follow. It serves as a reference that can be revisited, reducing the likelihood of errors that could result from working solely from memory or without a defined plan. Following the sketch, accurate measurements are taken, and then the cutting process occurs based on those established dimensions. This approach ensures efficiency and maintains the integrity of the design intended for the flat pattern.

7. Where is the side view typically located in relation to the frontal view in an orthographic drawing?

- A. Above the frontal view**
- B. Below the frontal view**
- C. To the side of the frontal view**
- D. Behind the frontal view**

In an orthographic drawing, the side view is typically positioned to the side of the frontal view. This arrangement is a standard convention used in technical drawings to provide a clear representation of an object in multiple dimensions. The frontal view displays the height and width of the object, while the side view provides insight into its depth and further details that may not be evident from the frontal perspective. This format allows engineers and mechanics to visualize the complete shape and structure of the object, facilitating more precise fabrication and assembly processes. By organizing views in this manner, it maintains a consistent and recognizable layout that professionals can interpret quickly and accurately. This is crucial in fields like aviation structural mechanics, where precise measurements and construction details are vital to maintaining safety and engineering standards.

8. What characteristic defines a flush head jo-bolt?

- A. It is adjustable**
- B. It is countersunk for a smooth surface**
- C. It has a larger diameter**
- D. It is made from composite materials**

A flush head jo-bolt is specifically designed to have a countersunk profile, which creates a smooth surface when it is installed. This design is crucial in applications where an uneven surface could potentially lead to safety hazards or affect the performance of other components, such as in aircraft or aerospace applications. The countersunk feature allows the head of the bolt to sit flush with the surrounding material, thereby eliminating any protrusions that might catch on equipment or create turbulence and drag in aviation contexts. This characteristic is particularly important in structural applications where aerodynamics and smooth surfaces are critical for performance. In contrast, the other options describe features that either do not pertain to the specific function of a flush head jo-bolt or suggest modifications that are not typical of this type of fastener.

9. What is a potential risk of an improper rivet joint layout?

- A. The joint could become too flexible**
- B. The joint may fail to meet regulatory standards**
- C. The rivet may not be able to carry the load**
- D. The rivet may and become loose over time**

The correct answer highlights a critical aspect of structural integrity in aviation. An improper rivet joint layout can lead to a misalignment of rivets or insufficient rivet placement, which directly impacts the ability of the rivet to transfer loads effectively. Each rivet must be strategically placed to distribute loads evenly across the joint. If the rivet layout is flawed, there may be insufficient support, leading to stress concentrations that exceed the rivet's capacity. Consequently, this could result in shear or tensile failure, jeopardizing the structural integrity of the aircraft component. Understanding the ramifications of an improper rivet joint layout reinforces the importance of meticulous design and assembly processes in aviation maintenance. Proper training and adherence to engineering specifications help ensure that joints are made with the correct number, type, and placement of rivets to carry the intended loads safely.

10. What is the main purpose of a drill press?

- A. For minimal drilling**
- B. Used for heavy duty and sensitive drilling**
- C. For drilling fragile materials only**
- D. For fast but inaccurate drilling**

The main purpose of a drill press is indeed for heavy-duty and sensitive drilling, as it provides a consistent, reliable, and precise way to drill holes in various materials. The drill press uses a stationary platform to hold the workpiece securely while the drill bit is brought down vertically. This setup allows for greater control over the drilling process compared to handheld drills, making it suitable for working on tougher materials and ensuring accurate depths and angles. Additionally, the drill press can be adjusted for speed and torque, accommodating different materials and drilling needs. This versatility further emphasizes its primary function for heavy-duty tasks, as well as for sensitive drilling applications where precision is crucial, such as when creating pilot holes or working with intricate designs. Overall, the combination of stability, control, and adaptability underlines its significance in machining operations.

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://navyam.examzify.com>

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

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