

Naval Aircrewman - Mechanical (AWF) Test 5 Practice (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 component is crucial for preventing the nose wheel from being cocked during retraction?**
 - A. Landing Gear Door**
 - B. Centering Cam**
 - C. Shock Strut**
 - D. Towing Lug**

- 2. What type of fastener is described as a threaded screw-type used on a hinged cap-style casket?**
 - A. Pins**
 - B. Threaded Fasteners**
 - C. Flush Mounts**
 - D. Hinge Fasteners**

- 3. What is the maximum micronic rating of non-cleanable filter elements used in hydraulic filtration?**
 - A. 1 micron**
 - B. 5 microns**
 - C. 10 microns**
 - D. 15 microns**

- 4. What is the primary use of hydraulic fluids in aircraft?**
 - A. To act as a fuel source**
 - B. To transmit power**
 - C. To clean aircraft exterior**
 - D. To modulate cabin pressure**

- 5. What type of actuator has a single piston shaft resulting in unequal working areas?**
 - A. Balanced Actuators**
 - B. Unbalanced Actuators**
 - C. Pneumatic Actuators**
 - D. Hydraulic Cylinders**

- 6. What materials are aircraft wheels primarily made of?**
- A. Aluminum or steel**
 - B. Aluminum or magnesium alloys**
 - C. Magnesium or composite materials**
 - D. Only steel alloys**
- 7. Which wheels are typically not interchangeable?**
- A. Divided wheels**
 - B. Demountable flange wheels**
 - C. Standard fixed wheels**
 - D. Split wheels**
- 8. What is the outer layer of rubber on a tire called?**
- A. Tread**
 - B. Sidewall**
 - C. Chafing strips**
 - D. Beads**
- 9. What materials are used to prevent the rotation and movement of fasteners in an aircraft?**
- A. Safetying Materials**
 - B. Retaining Materials**
 - C. Securing Materials**
 - D. Locking Materials**
- 10. What is unique about shear nuts?**
- A. They are not self-locking**
 - B. They are used with bolts and pins subjected to tensile stress**
 - C. They are often used with applications that endure shearing stress**
 - D. They provide a self-wrenching effect**

Answers

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

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Explanations

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1. What component is crucial for preventing the nose wheel from being cocked during retraction?

- A. Landing Gear Door**
- B. Centering Cam**
- C. Shock Strut**
- D. Towing Lug**

The centering cam is essential for preventing the nose wheel from becoming cocked during retraction. As the landing gear is retracted, the centering cam guides the nose wheel, ensuring that it aligns properly in its stowed position. This alignment is critical for the safe operation of the aircraft, as any misalignment could lead to issues during deployment or affect the aircraft's handling characteristics while in flight. In the retraction process, the centering cam plays a pivotal role by controlling the specific movement path of the nose wheel. It helps to maintain a defined trajectory, ensuring that the wheel does not turn or tilt inappropriately, which could potentially lead to mechanical failure or compromised safety. While other components like the landing gear door and shock strut serve important functions in the overall landing gear system, they do not specifically focus on the prevention of nose wheel cocking. The towing lug, typically used for ground handling, is also not involved in the retraction mechanism of the nose gear. This is why the centering cam is identified as the crucial component in this context.

2. What type of fastener is described as a threaded screw-type used on a hinged cap-style casket?

- A. Pins**
- B. Threaded Fasteners**
- C. Flush Mounts**
- D. Hinge Fasteners**

The description of a threaded screw-type fastener used on a hinged cap-style casket aligns with the characteristics of threaded fasteners. These fasteners feature a spiral ridge or thread which allows for a secure connection by engaging with a corresponding thread within a nut or a similarly threaded hole. In the context of hinged caskets, these threaded fasteners provide the necessary strength and reliability to keep the casket securely closed, ensuring that the lid remains in place when needed. Threaded fasteners are commonly used in various applications where a robust and adjustable mounting solution is required. The screw design allows for ease of installation and removal, making it practical for casket manufacturers. This versatility of threaded fasteners also contributes to their general use in the construction of items where mechanical integrity and reusability are key requirements.

3. What is the maximum micronic rating of non-cleanable filter elements used in hydraulic filtration?

- A. 1 micron
- B. 5 microns**
- C. 10 microns
- D. 15 microns

The maximum micronic rating of non-cleanable filter elements used in hydraulic filtration is typically 5 microns. This rating is significant because hydraulic systems require a level of cleanliness to ensure optimal performance and reliability. Filter elements that are rated at 5 microns are capable of trapping contaminants that could cause wear or damage to hydraulic components, thus maintaining the integrity of the system. Filtering at this level allows for the removal of particulates that are small enough to negatively impact hydraulic fluid behavior, while still allowing sufficient fluid flow. The choice of a 5-micron rating strikes a balance between filtration efficiency and maintaining system pressure and flow. Higher micronic ratings, such as 10 or 15 microns, may not sufficiently remove all harmful contaminants that can lead to hydraulic system failures. Therefore, the selection of a 5-micron rating as the maximum for non-cleanable filter elements reflects both industry standards and engineering practices aimed at promoting system longevity and reliability.

4. What is the primary use of hydraulic fluids in aircraft?

- A. To act as a fuel source
- B. To transmit power**
- C. To clean aircraft exterior
- D. To modulate cabin pressure

Hydraulic fluids play a crucial role in aircraft systems by transmitting power. In most aircraft, hydraulic systems are used to operate various components such as landing gear, flaps, brakes, and flight control surfaces. The hydraulic fluid transfers force from one location to another, allowing for the effective and efficient operation of these systems. The hydraulic system works on the principle of Pascal's law, which states that pressure applied to a confined fluid is transmitted undiminished in all directions. This allows for significant mechanical advantages and makes it possible to control heavy components with relative ease. The specific characteristics of hydraulic fluids—such as their ability to lubricate, resist temperature changes, and provide protection against corrosion—enhance their effectiveness in this application. While hydraulic fluids do have some other applications, such as assisting with the operation of various cleaning systems or influencing cabin pressure indirectly, their primary function in an aircraft is to facilitate the transmission of power within hydraulic systems.

5. What type of actuator has a single piston shaft resulting in unequal working areas?

- A. Balanced Actuators**
- B. Unbalanced Actuators**
- C. Pneumatic Actuators**
- D. Hydraulic Cylinders**

An unbalanced actuator is characterized by having a single piston shaft, which leads to differing surface areas on either side of the piston. This design creates a situation where the force exerted by the actuator can vary depending on the pressure applied, allowing for precise control in applications where torque or force needs to be varied or where a strong return force is necessary to move components. In contrast, balanced actuators have equal areas on both sides of the piston, resulting in a symmetrical force application when fluid power is applied. Pneumatic actuators and hydraulic cylinders can be types of balanced or unbalanced actuators depending on their design, but the key defining feature of unbalanced actuators is indeed their single piston shaft that leads to unequal working areas. This distinct design is what makes unbalanced actuators particularly effective in specific applications where their unique force characteristics are beneficial.

6. What materials are aircraft wheels primarily made of?

- A. Aluminum or steel**
- B. Aluminum or magnesium alloys**
- C. Magnesium or composite materials**
- D. Only steel alloys**

Aircraft wheels are primarily made of aluminum or magnesium alloys to strike a balance between strength, weight, and cost-effectiveness. Aluminum is favored for its lightweight properties, excellent strength-to-weight ratio, and resistance to corrosion, which are crucial factors in aviation where reducing weight plays a significant role in fuel efficiency and overall performance. Magnesium alloys are also used because they are even lighter than aluminum while maintaining adequate strength for the demanding conditions that aircraft wheels must withstand during takeoff, landing, and taxiing. The combination of these materials allows for optimal performance, ensuring that the wheels can handle high loads and the stresses involved in flight operations. Using only steel alloys, while strong, would result in significantly heavier wheels, which is not desirable in aviation due to the increased fuel consumption and reduced efficiency that would ensue. Composite materials, while advanced, are not typically utilized for the main structure of aircraft wheels because they may not meet the necessary mechanical properties required for such critical applications.

7. Which wheels are typically not interchangeable?

- A. Divided wheels
- B. Demountable flange wheels**
- C. Standard fixed wheels
- D. Split wheels

Demountable flange wheels are specifically designed with a unique bolting or clamping mechanism that allows them to be easily removed from the aircraft when servicing or replacing tires. This feature makes them less common and typically non-interchangeable with other types of wheels. Unlike standard fixed wheels or split wheels, which can often be swapped out on various aircraft, demountable flange wheels possess specific designs and dimensions tailored to particular installations and aircraft types. This specialization in their design limits their interchangeability across different models, making them distinct within the category of aircraft wheels. In contrast, the other options usually share compatibility or standard designs that allow for interchangeability among different aircraft or wheel assemblies.

8. What is the outer layer of rubber on a tire called?

- A. Tread**
- B. Sidewall
- C. Chafing strips
- D. Beads

The outer layer of rubber on a tire is known as the tread. This component is crucial because it provides the tire with traction, allowing the vehicle to grip the road surface effectively. The tread design, including its patterns and grooves, plays a significant role in channeling water away from the tire during wet conditions, thus helping to prevent hydroplaning. In addition to traction, the tread also affects the tire's performance characteristics, such as handling, stability, and wear. It is the part of the tire that comes into direct contact with the road, making it essential for driving safety and efficiency. The tread's design varies depending on the type of tire and its intended use, whether it be for cars, trucks, or specialized vehicles. Knowing the function of the tread is important for understanding overall tire maintenance and safety, as well as for recognizing when a tire may need to be replaced due to tread wear.

9. What materials are used to prevent the rotation and movement of fasteners in an aircraft?

- A. Safetying Materials**
- B. Retaining Materials**
- C. Securing Materials**
- D. Locking Materials**

The correct answer pertains to safetying materials, which are specifically designed to prevent fasteners from rotating or moving in aircraft applications. Safetying methods and materials include features such as cotter pins, safety wire, and snap rings that are used to secure fasteners in place. These materials ensure that critical components remain tightly secured, even under the vibration and stress common during flight operations. In aviation, maintaining the integrity of fasteners is vital for safety and performance, as even minor shifts can lead to failure of structural components. Safetying practices serve to enhance reliability by providing additional layers of security to fasteners, which is essential in maintaining the overall safety of the aircraft. The other terms, while similar, do not specifically capture the unique role of that category of materials in preventing fasteners from moving. Retaining materials may suggest a function related to holding components in place but lack the explicit connection to fasteners. Securing materials could imply methods of securing components in a broader sense but do not focus specifically on the prevention of movement of fasteners. Locking materials might seem relevant, but they generally refer to mechanisms that actively lock components in place rather than the broader practice of safetying.

10. What is unique about shear nuts?

- A. They are not self-locking**
- B. They are used with bolts and pins subjected to tensile stress**
- C. They are often used with applications that endure shearing stress**
- D. They provide a self-wrenching effect**

Shear nuts are specifically designed to be used in applications where shearing stress is a significant factor. Their unique feature is that they are intended to fail or shear off at a specific load, which makes them particularly useful in scenarios where you want to control or limit the amount of shear force applied to a joint. This functionality is critical in preventing damage to the equipment, as it allows for a predictable failure mode that can protect other components in the assembly. Applications such as aircraft structures often experience complex loading scenarios, and the use of shear nuts helps to manage and distribute those loads effectively. Their design ensures that they provide optimal performance in situations where shear forces are predominant, thereby enhancing safety and reliability in structural integrity. The other options discuss characteristics that do not apply to shear nuts. They are not self-locking, they are not primarily used for tensile loads, and the concept of a self-wrenching effect relates to different types of fasteners designed to remain tight without additional service. The focus of shear nuts distinctly relates to managing shearing stress, which is why this answer is the most accurate.

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://awftest5.examzify.com>

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

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