

Aircrewman Mechanical (AWF) Test 3 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. Which feature is associated with fuel contamination control?**
 - A. Sump and drains collect water and sediment**
 - B. Pressure gauges circulate fuel**
 - C. Temperature sensors heat fuel**
 - D. Vent lines measure contamination**

- 2. In jet propulsion, how is thrust produced?**
 - A. By pushing a column of air to the rear at extremely high speeds.**
 - B. By heating air in the combustion chamber.**
 - C. By compressing air without movement.**
 - D. By creating a vacuum to pull air forward.**

- 3. What does the torque meter assembly indicate on a naval engine?**
 - A. Fuel pressure**
 - B. Exhaust temperature**
 - C. Torsional deflection**
 - D. RPM**

- 4. What is the primary purpose of grounding in aircraft electrical systems?**
 - A. Providing a zero-voltage reference and safe path to dissipate static and hazards.**
 - B. Increasing the available current in the system.**
 - C. Acting as a reserve power source for emergencies.**
 - D. Reducing electrical noise by isolation.**

- 5. Micronic-type filters can use which materials?**
 - A. Paper only**
 - B. Paper or metal**
 - C. Metal only**
 - D. Ceramic**

- 6. Which are the three types of vanes used in gas turbine engines?**
- A. Rotor vanes, stator vanes, inlet guide vanes**
 - B. Turbine vanes, compressor vanes, exhaust vanes**
 - C. Intake vanes, outlet vanes, bypass vanes**
 - D. Guide vanes only**
- 7. What do avionics provide in navigation and safety?**
- A. They manage the environmental control system.**
 - B. They provide navigation data, situational awareness, communications, and safety monitoring.**
 - C. They power the flight control actuators.**
 - D. They calibrate the landing gear.**
- 8. Which statement best describes the function of aircraft fuel systems?**
- A. All of the above**
 - B. Store fuel**
 - C. Supply to engines**
 - D. Supply to APU**
- 9. Identify two common failure indicators in hydraulic systems and their causes.**
- A. Overheating the system with excessive load and rust buildup.**
 - B. Electrical faults causing control signal loss.**
 - C. Condensation in the hydraulic fluid causing freezing.**
 - D. Leaks (pressure loss) and pump cavitation (air in lines, low fluid, contamination).**
- 10. What is the function of accessory bearings?**
- A. Support the compressor rotors**
 - B. Absorb loads created by drive shafts and gears; allows accessory shafts and gears to rotate freely**
 - C. Act like a maze**
 - D. Use reverse threading to prevent leaks**

Answers

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

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Explanations

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1. Which feature is associated with fuel contamination control?

- A. Sump and drains collect water and sediment**
- B. Pressure gauges circulate fuel**
- C. Temperature sensors heat fuel**
- D. Vent lines measure contamination**

Contamination control in fuel systems relies on removing water and sediment before the fuel reaches the engine. Sumps located at low points in the tanks collect any free water and sediment that settle out of the fuel. Drains allow you to periodically drain these liquids and inspect what's in the sump, giving a direct way to monitor and remove contamination. That's why this feature—sump drains collecting water and sediment—is the best association. The other options describe components that monitor pressure, heat fuel, or vent vapors, rather than directly removing or identifying water/sediment contamination in the fuel.

2. In jet propulsion, how is thrust produced?

- A. By pushing a column of air to the rear at extremely high speeds.**
- B. By heating air in the combustion chamber.**
- C. By compressing air without movement.**
- D. By creating a vacuum to pull air forward.**

Thrust in jet propulsion comes from accelerating a mass of air rearward so that the reaction force pushes the aircraft forward. The engine draws in air, compresses and mixes it with fuel, burns it, and then expels the hot gases at high speed out the nozzle. That rapid backward acceleration of air transfers momentum backward, and by Newton's third law the aircraft experiences a forward push. Pushing a column of air to the rear at extremely high speeds captures this momentum change—the exhaust leaves the engine rearward, creating the forward thrust you feel. Heating air in the combustion chamber is part of how the exhaust gains energy, but thrust isn't produced by heat alone; it's produced by accelerating the exhaust to high velocity. Compressing air without movement doesn't generate thrust, and creating a vacuum to pull air forward isn't how jet propulsion operates.

3. What does the torque meter assembly indicate on a naval engine?

- A. Fuel pressure**
- B. Exhaust temperature**
- C. Torsional deflection**
- D. RPM**

Torque in a naval propulsion system twists the drive shaft as torque is transmitted from the engine to the propeller. The torque meter assembly is built to read that twist, i.e., the torsional deflection between two points along the shaft or through a torsion element. By sensing how much the shaft twists under load, it provides a reading that reflects the torque being transmitted. This is distinct from fuel pressure, exhaust temperature, or RPM, which are measured to monitor fuel supply, exhaust conditions, and engine speed, respectively. The torque meter's purpose is to monitor shaft torsion to detect overload, misalignment, or changes in propulsive load, helping protect the drive train from fatigue or failure.

4. What is the primary purpose of grounding in aircraft electrical systems?

- A. Providing a zero-voltage reference and safe path to dissipate static and hazards.**
- B. Increasing the available current in the system.**
- C. Acting as a reserve power source for emergencies.**
- D. Reducing electrical noise by isolation.**

Grounding provides a zero-voltage reference for the aircraft's electrical system and gives a safe, low-impedance path for fault currents and static charges to dissipate into the airframe. This keeps voltages predictable, protects equipment, and reduces the risk of electric shocks to crew. When a fault occurs or static builds up, the current and charge have a clear path to ground, which helps protective devices trip and keeps the aircraft safe to operate. The other ideas don't capture the main purpose. Grounding does not create energy or increase available current, so it isn't a reserve power source. And while grounding helps manage electrical noise by giving a common reference and a path for noise to flow to ground, it isn't about isolation; isolation would reduce coupling, but grounding sets a defined reference and proper return path for currents.

5. Micronic-type filters can use which materials?

- A. Paper only**
- B. Paper or metal**
- C. Metal only**
- D. Ceramic**

Micronic-type filters are designed for very fine particle removal, so the filter media must be able to create stable, tightly controlled pore sizes while withstanding the system's fluids. The two most common media for this kind of filter are paper and metal. Paper filters use cellulose to form a porous path that traps small particles and is inexpensive and lightweight, making them suitable for many applications, though they may have limits in chemical compatibility and temperature. Metal filters, typically sintered or mesh-based, offer greater strength, higher chemical and heat tolerance, and the ability to be cleaned and reused. Ceramic media do exist for certain high-temperature or specialized filtration needs, but they are not the standard media for typical micronic-type filters in this context. Hence, micronic-type filters are commonly made from either paper or metal.

6. Which are the three types of vanes used in gas turbine engines?

- A. Rotor vanes, stator vanes, inlet guide vanes**
- B. Turbine vanes, compressor vanes, exhaust vanes**
- C. Intake vanes, outlet vanes, bypass vanes**
- D. Guide vanes only**

The main idea is that vane types in a gas turbine are defined by where they are located and what they do for the flow. Rotor vanes are the blades that rotate with the shaft; they interact with the gas to transfer energy and drive the train of stages. Stator vanes are fixed blades placed between stages that direct the flow and convert the gas's velocity into pressure, shaping the path as the air moves from one rotating stage to the next. Inlet guide vanes sit at the compressor intake and straighten the incoming flow, setting the proper angle for the air to enter the rotor correctly at various operating speeds. So, the three common vane types are rotor vanes, stator vanes, and inlet guide vanes. The other groupings don't reflect this standard arrangement or omit a key type (for example, some options mix rotating and fixed components or leave out the inlet conditioning vane).

7. What do avionics provide in navigation and safety?

- A. They manage the environmental control system.
- B. They provide navigation data, situational awareness, communications, and safety monitoring.**
- C. They power the flight control actuators.
- D. They calibrate the landing gear.

Avionics are the electronic systems that handle navigation, situational awareness, communications, and safety monitoring. They take data from sensors like GPS, inertial reference, altimeters, radar, and weather sensors to determine where the aircraft is and how it's moving (navigation data). They present this information in a way that keeps the crew informed about the aircraft's position relative to the flight plan, nearby traffic, terrain, and weather, which is the situational awareness part. They also manage and relay communications, including radios and data links, so pilots can talk to ATC and other aircraft. And they continuously monitor aircraft systems to detect faults or unsafe conditions and issue warnings or alarms as needed (safety monitoring). That combination—navigation data, situational awareness displays, communications, and safety monitoring—is what makes avionics central to navigation and safety. The other options describe non-avionic subsystems (environmental controls, power to actuators, or landing gear calibration) and don't capture the broader electronic systems that support orientation, communication, and safety in flight.

8. Which statement best describes the function of aircraft fuel systems?

- A. All of the above**
- B. Store fuel
- C. Supply to engines
- D. Supply to APU

The fuel system is designed to keep fuel available where and when it's needed, in the right condition, for both propulsion and power. Fuel is stored in tanks and then moved through pumps and lines to where it's required. For engines, pumps and a control/metering unit regulate the flow and pressure to ensure the engines receive the correct amount of fuel across all throttle settings. The APU also needs a reliable fuel feed from the same tanks through its own pump and line so it can start and run when the engines aren't operating. Since these duties—storing fuel and supplying it to both engines and the APU—are all handled by the fuel system, the best description is that it stores fuel and supplies to the engines and to the APU.

- 9. Identify two common failure indicators in hydraulic systems and their causes.**
- A. Overheating the system with excessive load and rust buildup.**
 - B. Electrical faults causing control signal loss.**
 - C. Condensation in the hydraulic fluid causing freezing.**
 - D. Leaks (pressure loss) and pump cavitation (air in lines, low fluid, contamination).**

In hydraulic systems, a couple of the most common failure indicators are pressure loss due to leaks and pump cavitation. Leaks are easy to spot because they cause a drop in system pressure and a loss of actuation force or speed. Fluid escapes through worn seals, fittings, or hoses, so you'll see reduced performance and potential environmental or equipment contamination. Pump cavitation shows up as noise, vibration, and a drop in pump efficiency. It happens when the local pressure on the suction side falls below the fluid's vapor pressure, creating vapor pockets that collapse as they move into higher pressure areas. The typical culprits are air in the lines, a low fluid level on the suction side, and contamination in the fluid. Air entrainment and dirty or insufficient fluid disrupt smooth flow and pressure, promoting cavitation and accelerating wear. So, the two common failure indicators and their causes are leaks causing pressure loss and cavitation caused by air in lines, low fluid, or contamination.

10. What is the function of accessory bearings?

- A. Support the compressor rotors**
- B. Absorb loads created by drive shafts and gears; allows accessory shafts and gears to rotate freely**
- C. Act like a maze**
- D. Use reverse threading to prevent leaks**

The function of accessory bearings is to absorb the loads created by drive shafts and gears and to keep accessory shafts and gears rotating freely. In an engine's accessory gearbox, these bearings support the shafts that drive pumps, generators, starters, and other accessories. They take both radial loads (from gear mesh and shaft bending) and axial loads (from gear thrust or belt tensions) and maintain proper alignment, which reduces wear and keeps the gears meshing smoothly. This smooth rotation and load handling are what allow the accessory devices to operate reliably with minimal friction. They don't support compressor rotors, aren't a maze, and aren't related to reverse threading for leaks.

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://awf3.examzify.com>

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

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