Gas Turbine Systems Technician – Mechanical (GSM) A School Test 1 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

1. LPAC intake air passes through how many filters?

- **A. 1**
- **B. 2**
- **C. 3**
- **D. 4**

2. Technical work documents include which items?

- **A. Maintenance procedure, formal work packages, controlled work packages**
- **B. Wiring diagrams and schematics**
- **C. Training manuals**
- **D. Safety data sheets**

3. Which space is explicitly noted in the fire pump location list?

- **A. 2 generator**
- **B. 4 generator**
- **C. Main deck**
- **D. 3 generator**

4. Which description best matches the LPAC's compressor design?

- **A. Rotary single screw, main rotor mount, water flooded, oil free**
- **B. Rotary single screw only**
- **C. Centrifugal, oil-lubricated**
- **D. Piston-type, oil-filled**

5. What is the main LO capacity measured in TEP?

- **A. 2190 TEP**
- **B. 2300 TEP**
- **C. 1800 TEP**
- **D. 2000 TEP**

6. The vital air service maintains what pressure?

A. 125 PSIG

B. 150 PSIG

C. 100 PSIG

D. 60 PSIG

7. What is the starboard fuel capacity in engine room #2?

A. 18,000 gal

B. 22,000 gal

C. 24,000 gal

D. 20,000 gal

8. The fire pump location includes which of the following spaces?

A. Forward VCHT

B. Bridge

C. Crew mess

D. Aux 1

9. Which description best classifies the attached LO pump?

A. Vertical mounted; centrifugal; piston

B. Vertical mounted; positive displacement; rotary vane

C. Horizontal mounted; positive displacement; rotary screw

D. Horizontal mounted; centrifugal; piston

10. The LO basket used for filtration has what micron rating?

A. 20 micron

B. 80 micron

C. 40 micron

D. 60 micron

Answers

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

Explanations

1. LPAC intake air passes through how many filters?

A. 1

B. 2

C. 3

D. 4

Two filters are used. The intake air for the LPAC goes through a two-stage filtration setup: a coarse prefilter to catch large dust and debris, followed by a high-efficiency final filter to remove finer particles before the air enters the compressor. This arrangement protects the compressor from damage and deposits while keeping the pressure drop reasonable. Using only one filter wouldn't provide adequate protection, and having more than two isn't typical for LPAC intakes and would add unnecessary resistance and maintenance.

2. Technical work documents include which items?

A. Maintenance procedure, formal work packages, controlled work packages

B. Wiring diagrams and schematics

C. Training manuals

D. Safety data sheets

Technical work documents are the written guides that tell you exactly how maintenance work should be performed. The best example here is maintenance procedure, formal work packages, and controlled work packages. A maintenance procedure gives the step-by-step actions, required tools, parts, tolerances, and safety measures to complete a task. A formal work package outlines the scope, sequence, needed manpower, schedule, and acceptance criteria for a job, providing a clear plan. A controlled work package is a formal work package that's under change control, with approved revisions and restricted distribution to ensure everyone uses the current instructions. Wiring diagrams and schematics are essential references for understanding electrical layouts, but they aren't the task-ready instructions for performing work. Training manuals are for teaching skills and knowledge, not for guiding a specific maintenance task. Safety data sheets provide hazard information about materials, not the procedural steps to do the work.

3. Which space is explicitly noted in the fire pump location list?

A. 2 generator

B. 4 generator

C. Main deck

D. 3 generator

Fire pump location lists pin down the exact compartments where the pump is installed, using the ship's space designations. The space that is explicitly listed is the third generator space, labeled as "3 generator." This designation appears in the list, so it's the one noted as a fire pump location. The other options don't fit because they either refer to different generator spaces that aren't indicated in the list, or they're a deck designation rather than a specific space name (for example, a deck name like Main deck isn't a space entry in this context).

4. Which description best matches the LPAC's compressor design?

A. Rotary single screw, main rotor mount, water flooded, oil free

B. Rotary single screw only

C. Centrifugal, oil-lubricated

D. Piston-type, oil-filled

The key idea is the type and lubrication method of an LPAC compressor. LPACs are designed as rotary screw machines that deliver bleed air with minimal or no oil contamination. The description provided—rotary single screw with the rotor mounted in a main support, using water flooding and oil-free operation—fits this approach. Water flooding provides lubrication and seals in place of oil, so the compressed air remains oil-free, which is important for downstream systems. The "main rotor mount" detail just highlights the mechanical arrangement that keeps the screw timing and clearances stable for efficient, continuous compression at the modest pressure ratios typical of an LPAC. Other options describe different compressor types or oil-based lubrication schemes that don't match how LPACs are typically designed to avoid oil carryover in the air stream.

5. What is the main LO capacity measured in TEP?

A. 2190 TEP

B. 2300 TEP

C. 1800 TEP

D. 2000 TEP

The main thing being tested is the lubrication oil system's rated capacity, expressed as TEP, which represents the maximum load the LO system is designed to support while keeping oil pressure and temperature within safe limits. In this context, 2190 TEP is the designated LO capacity for the test setup, matching the engine's documented design spec. This value defines the performance envelope the system must meet during high-demand operation, so it's the correct choice because it aligns with the official rating the test uses. The other numbers would not match the specified design rating for this LO system, so they don't fit the scenario.

6. The vital air service maintains what pressure?

A. 125 PSIG

B. 150 PSIG

C. 100 PSIG

D. 60 PSIG

Vital air is a dedicated, independent pneumatic supply kept at a fixed pressure to ensure reliable operation of critical, emergency, or safety-related pneumatic devices even if the main air system is down. The pressure is set at 125 PSIG because that level provides enough driving force to actuate valves, starters, and other control components across the aircraft's operating conditions, without over-stressing the hardware. If the pressure were significantly higher, components could be exposed to unnecessary stress or leakage paths; if it were lower, actuators might not respond promptly or reliably during start, shutdown, or emergency actions. In short, 125 PSIG is chosen to balance dependable actuation with system tolerances, which is why it's the specified value.

7. What is the starboard fuel capacity in engine room #2?

A. 18,000 gal

B. 22,000 gal

C. 24,000 gal

D. 20,000 gal

Fuel tank capacities are given per compartment and side in the ship's fuel layout. For engine room number two, the tank on the starboard side is specified as 20,000 gallons. This value comes directly from the documentation and is used for planning total fuel on board and maintaining proper trim and balance. The other numbers correspond to different tanks or different engine rooms, not this particular starboard tank in engine room two.

8. The fire pump location includes which of the following spaces?

A. Forward VCHT

B. Bridge

C. Crew mess

D. Aux 1

The question tests where the ship's firefighting pump is housed. The fire pump is part of the ship's auxiliary machinery and is placed in an auxiliary space dedicated to equipment, typically Aux 1, so it's in a mechanical area with ready access to the fire main and maintenance access. The other spaces listed aren't equipment rooms: Forward VCHT is a ventilation-related area, the Bridge is for navigation and command, and the Crew mess is a living area. So Aux 1 is the correct location for the fire pump.

9. Which description best classifies the attached LO pump?

A. Vertical mounted; centrifugal; piston

B. Vertical mounted; positive displacement; rotary vane

C. Horizontal mounted; positive displacement; rotary screw

D. Horizontal mounted; centrifugal; piston

This question tests how to classify a lubricating oil pump by orientation, displacement type, and rotor design. For lubrication systems, a steady, pressurized flow of viscous oil is needed, so a positive displacement pump is favored because its flow remains relatively constant as system pressure changes. Within positive displacement pumps, a rotary screw design uses two intermeshing screws to trap fixed volumes of oil and move them along with minimal pulsation, which is ideal for lubricating circuits dealing with viscous fluids and varying speeds. The horizontal mounting matches common installation practice for oil pumps that are driven by the engine's accessory drive and tied into long piping runs, making alignment and service straightforward. Centrifugal pumps, on the other hand, rely on head pressure and produce flow that varies with system pressure, which isn't suited for maintaining consistent lubrication. Piston and rotary vane pumps are other positive displacement options, but they don't fit the typical LO pump configuration shown in many gas turbine installations, whereas a rotary screw pump does. So the best match is a horizontally mounted, positive displacement, rotary screw pump.

10. The LO basket used for filtration has what micron rating?

A. 20 micron

B. 80 micron

C. 40 micron

D. 60 micron

The key idea here is how micron rating determines what size particles a filter catches and how that affects flow. The LO basket acts as a coarse screen in the lubrication oil path, catching larger debris early to protect the pump and downstream filters. A 40 micron rating is a good compromise: it removes the larger, more damaging contaminants while still allowing adequate oil flow with a manageable pressure drop. If it were finer, like 20 microns, it would clog more quickly and reduce flow; if it were coarser, like 60 or 80 microns, smaller but still harmful particles could pass through and cause wear. So, the LO basket is designed to be about 40 microns to balance filtration and flow.

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://gsmaschool1.examzify.com

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