

GAS TURBINE SYSTEMS TECHNICIAN – MECHANICAL (GSM) A SCHOOL TEST 1 PRACTICE (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

**VISIT US ONLINE FOR
THE FULL VERSION STUDY GUIDE**

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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 are the two LPAC 2 operating modes?

- A. Automatic
- B. Manual
- C. Automatic & Manual
- D. Off

2. What is included in a Revision record?

- A. Revision number, date of revision, revised paragraph, and TMDERs number
- B. Author name and page number
- C. Maintenance schedule
- D. Warranty information

3. What does EGT measure and why is it important?

- A. Exhaust Gas Temperature; indicates turbine inlet temperature and fuel/air ratio health; high EGT can indicate over-fueling or lean conditions.
- B. Engine Gas Temperature; measures ambient temperature.
- C. Exhaust Gas Timing; used for maintenance scheduling.
- D. Emissions Gas Temperature; monitors NOx.

4. Describe the function of the accessory gearbox (AGB) in a gas turbine engine.

- A. Drives auxiliary components such as fuel pump, lubrication pump, starting motor, and generators from the engine
- B. Cools the combustor
- C. Houses main shaft
- D. Controls main fuel metering

5. What is the purpose of the fuel control unit in a gas turbine?

- A. Measure ambient conditions and adjust fuel accordingly.
- B. Filter fuel and ignore temperature effects.
- C. Control lubricating oil pressure.
- D. Meter and schedule fuel flow to maintain the desired speed/power, regulate for altitude/temperature, and protect the engine from over-temp.

- 6. In an ignition system, what action is taken if flameout occurs and ignition is lost?**
- A. Re-establish ignition and perform relight per procedure.
 - B. Ignore and continue.
 - C. Shut down immediately with no relight.
 - D. Increase fuel flow without ignition.
- 7. Which type of tank has a capacity of 600 gallons?**
- A. Service fuel tanks
 - B. Fuel head tanks
 - C. Gravity feed tanks
 - D. LO sumo tanks
- 8. What does a variable bleed valve (VBV) do in compressor stability control?**
- A. Bleeds off air from the compressor at certain speeds to maintain stable operation and prevent surge.
 - B. Increases fuel flow during high demand.
 - C. Provides lubrication to compressor bearings.
 - D. Adjusts compressor exit guide vane angle to optimize efficiency.
- 9. LPAC is powered by which horsepower electric motor?**
- A. 30 HP
 - B. 90 HP
 - C. 60 HP
 - D. 120 HP
- 10. What is the general purpose of Tech Manuals?**
- A. Documents information for operation, troubleshooting, overhaul, and repair
 - B. Track ship berth assignments
 - C. Register personnel hours
 - D. Manage fuel inventory

Answers

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

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Explanations

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1. What are the two LPAC 2 operating modes?

- A. Automatic
- B. Manual
- C. Automatic & Manual**
- D. Off

LPAC 2 has two control modes: automatic and manual. In automatic mode, the LPAC 2 is governed by the control system, using sensors and preset logic to maintain the desired pressure or flow without operator intervention. This is how it runs during normal operations, responding to load demands and system conditions automatically. In manual mode, an operator can override the automatic control to directly set parameters such as speed or valve positions for testing, maintenance, or troubleshooting when automatic logic needs to be bypassed. The two modes together cover both routine operation and hands-on control, which is why the correct answer lists both modes. The option that implies only one mode isn't capturing the alternative method of operation, and "Off" is simply a shutdown state rather than an operating mode.

2. What is included in a Revision record?

- A. Revision number, date of revision, revised paragraph, and TMDERs number**
- B. Author name and page number
- C. Maintenance schedule
- D. Warranty information

Revision records capture changes to a manual or technical document so you can see what was changed, when it happened, and why. The key elements are the revision number, which shows the sequence of edits; the date of the revision, to know when the change was made; the revised paragraph, which identifies exactly what text was altered; and the TMDERs number, which links the change to the official change directive or engineering record that authorized it. This combination creates a clear audit trail, letting anyone verify the current instructions and trace back to the origin of the modification. Other items like author name, page number, maintenance schedule, or warranty information aren't part of the revision record itself.

3. What does EGT measure and why is it important?

- A. Exhaust Gas Temperature; indicates turbine inlet temperature and fuel/air ratio health; high EGT can indicate over-fueling or lean conditions.**
- B. Engine Gas Temperature; measures ambient temperature.
- C. Exhaust Gas Timing; used for maintenance scheduling.
- D. Emissions Gas Temperature; monitors NOx.

Exhaust Gas Temperature is the temperature of the gases as they leave the combustion chamber and head toward the turbine. This reading ties directly to the combustion process inside the engine: it reflects how hot the turbine inlet condition is and, to a practical extent, how the fuel and air are being balanced. Keeping EGT within design limits is crucial because an elevated EGT means the combustor is running hotter than intended, which can stress turbine blades and shorten life. A rising EGT usually signals that the fuel-air mix isn't producing the right burn—often associated with over-fueling or a condition that effectively creates too much heat in the combustor. Conversely, persistently low or abnormal readings can point to fuel-control or air-delivery issues, and they provide a quick diagnostic check beyond what ambient temperature readings or timing discussions would offer. Other terms don't describe what EGT measures or why it's watched: it's not about ambient temperature, timing, or general emissions temperature; it's specifically the exhaust temperature that serves as a direct indicator of combustion heat entering the turbine.

4. Describe the function of the accessory gearbox (AGB) in a gas turbine engine.

- A. Drives auxiliary components such as fuel pump, lubrication pump, starting motor, and generators from the engine**
- B. Cools the combustor
- C. Houses main shaft
- D. Controls main fuel metering

The accessory gearbox provides the mechanical drive for the engine's auxiliary devices by taking power from the engine through a gear train and delivering it to components such as the fuel pump, lubrication pump, starting motor, and electrical generators. This setup allows the engine to be started and to run its essential support systems, with the gear reduction ensuring the accessories run at appropriate speeds regardless of the core RPM. It's not responsible for cooling the combustor, housing the main shaft, or governing main fuel metering—those functions belong to other parts of the engine or separate systems.

5. What is the purpose of the fuel control unit in a gas turbine?

- A. Measure ambient conditions and adjust fuel accordingly.
- B. Filter fuel and ignore temperature effects.
- C. Control lubricating oil pressure.
- D. Meter and schedule fuel flow to maintain the desired speed/power, regulate for altitude/temperature, and protect the engine from over-temp.**

Fuel control is about precisely metering and scheduling the fuel that fires the combustor so the engine meets the desired speed or power. The fuel control unit takes the commanded operating point and translates it into the exact amount of fuel to inject, while continuously adjusting for changing conditions. It uses sensor data on engine speed, temperatures, and sometimes turbine inlet temperature, along with ambient conditions like altitude and air temperature, to keep the engine running at the required point without overstressing it. It also provides protection by limiting fuel flow if signs of over-temperature or other unsafe conditions appear, preventing damage to the turbine and compressor. That combination—metering fuel to meet speed/power goals, correcting for altitude and temperature, and protecting against overheating—is why this option is the best description. The other ideas fall short because the fuel control unit's purpose isn't simply measuring ambient conditions or filtering fuel without regard to temperature effects, and it isn't about controlling lubricating oil pressure. While ambient conditions inform the adjustments, the core function is to meter and schedule fuel flow to achieve the desired operation and safety limits.

6. In an ignition system, what action is taken if flameout occurs and ignition is lost?

- A. Re-establish ignition and perform relight per procedure.**
- B. Ignore and continue.
- C. Shut down immediately with no relight.
- D. Increase fuel flow without ignition.

Flameout means the combustor flame has been extinguished, so the safe, correct action is to re-establish ignition and perform a relight according to the procedure. This re-ignition is done under controlled conditions to verify that fuel, air, and the ignition source are all correct and to confirm the flame is re-lit without creating a hazardous condition. After relighting, continue to monitor operation and check for any fault that caused the flameout in the first place. Ignoring the flameout would let unburned fuel accumulate, creating a risk of delayed ignition or explosion. Shutting down immediately with no relight is excessive unless the procedure calls for it due to a fault. Increasing fuel flow without ignition would worsen the unsafe fuel/air condition.

7. Which type of tank has a capacity of 600 gallons?

- A. Service fuel tanks
- B. Fuel head tanks
- C. Gravity feed tanks**
- D. LO sumo tanks

Gravity feed tanks deliver fuel by gravity from an elevated reservoir, so no pump is needed to move fuel to the system. The height difference creates hydrostatic pressure that pushes fuel through the lines, allowing a simple, reliable feed as long as the head is maintained. The 600-gallon capacity is chosen to meet the required supply duration for the system in this configuration, ensuring enough fuel is available without refilling while gravity maintains the flow. Other tank types exist for different roles: service fuel tanks are used for general storage and servicing, fuel head tanks provide a pressure head to the feed system, and LO sumo tanks refer to a different designation not used for this gravity-fed setup.

8. What does a variable bleed valve (VBV) do in compressor stability control?

- A. Bleeds off air from the compressor at certain speeds to maintain stable operation and prevent surge.**
- B. Increases fuel flow during high demand.
- C. Provides lubrication to compressor bearings.
- D. Adjusts compressor exit guide vane angle to optimize efficiency.

The main idea is that a variable bleed valve keeps the compressor operating in a stable range by removing some of the air from the compressor at certain speeds. By diverting a portion of the compressed air to the bypass or inlet, it lowers the effective pressure rise across the compressor, which helps prevent flow reversal and stall—i.e., surge. This bleed action smooths operation during changing conditions like acceleration or light-load, maintaining stable, surge-free flow. It isn't about increasing fuel flow, providing lubrication, or changing the vane angle. Those functions belong to other systems and controls.

9. LPAC is powered by which horsepower electric motor?

- A. 30 HP
- B. 90 HP
- C. 60 HP**
- D. 120 HP

LPAC needs enough starting torque and air flow to spin up the low pressure compressor and supply the air required for engine starts and auxiliary duties. A 60 HP electric motor provides that needed torque and volume without being excessive. A motor as small as 30 HP would likely be undersized, struggling to deliver sufficient air at startup. Motors rated at 90 or 120 HP would provide more than needed, wasting energy, increasing cost, and requiring larger electrical feeds. Therefore, 60 HP is the right balance for reliable LPAC operation.

10. What is the general purpose of Tech Manuals?

- A. Documents information for operation, troubleshooting, overhaul, and repair
- B. Track ship berth assignments
- C. Register personnel hours
- D. Manage fuel inventory

Tech manuals are the go-to reference for how to operate, troubleshoot, overhaul, and repair equipment. They provide authoritative guidance on normal operating parameters, start and stop procedures, maintenance intervals, and safety precautions. They also include detailed instructions for disassembly and reassembly, troubleshooting steps or fault-symptom charts, torque specs, lubrication points, inspection criteria, wiring diagrams, and lists of replacement parts. This combination lets technicians perform tasks accurately, safely, and consistently, which keeps equipment reliable and compliant. Tracking berth assignments, recording personnel hours, or managing fuel inventory are administrative or logistics duties, not functions of the technical reference used for operating and repairing equipment.

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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:

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

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