GAS TURBINE SYSTEMS TECHNICIAN – MECHANICAL (GSM) A SCHOOL TEST 4 PRACTICE (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. What controls air pressure for starting?

A. Bleed air valve

B. Engine governor

C. Air compressor discharge line

D. Start air control valve/regulator

2. The Fuel Feed and Drain System provides a signal to the FADC/LOCOP when the fuel manifold pressure falls below which value?

A. 100 psig

B. 150 psig

C. 200 psig

D. 250 psig

3. The Transfer Gearbox (TGB) transmits power for starting the Gas Turbine Engine (GTE) drive train from which engine?

A. Model 350-KS4 engine

B. Model 250-KS4 engine

C. Model 150-KS4 engine

D. Model 250-KS2 engine

4. What transmits power from the starting RIMMS to the high speed reducing gear?

A. Starter motor

B. Clutch

C. Drive shaft

D. High speed gearbox

5. What type of valve feeds fuel to the drain?

A. Spring loaded inlet check valve

B. Ball valve

C. Globe valve

D. Stop valve

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6. Fuel nozzles receive fuel from which valve?

A. Flow divider valve

B. Shut-off valve

C. Fuel return valve

D. Pressure regulating valve

7. Which valve closes the 5th and 10th stage of bleed air?

A. Pilot air control valve

B. Bleed air shutoff valve

C. Engine bleed valve

D. Main fuel valve

8. Which statement best describes the role of the fuel nozzle in the combustor?

A. Delivers fuel in a spray pattern that provides the best air-fuel mixture for combustion

B. Filters fuel before delivery

C. Ignites the fuel-air mixture

D. Regulates fuel temperature

9. What happens while starting the RIMS if the emergency stop reaches 13,000 RPM?

A. Temperature rises above 800 F

B. Temperature at 900 F

C. Less than 600 F

D. Temperature reaches 1200 F

10. Which statement about FADAC/LOCAP is true?

A. Fully operational in standby mode

B. Fully operational in manual mode

C. Fully operational in normal mode

D. Not operational at all times

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Answers

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

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Explanations

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1. What controls air pressure for starting?

A. Bleed air valve

B. Engine governor

C. Air compressor discharge line

D. Start air control valve/regulator

Starting air pressure must be delivered at a controlled value to spool the engine safely and smoothly. The Start Air Control Valve/Regulator is the component that meters and limits the air going to the starter, keeping the pressure at the set level and cutting off when the engine reaches the desired speed. This control prevents over-pressurizing the starter and protects the system during the start sequence. Bleed air valves serve other functions and aren't the primary regulator for the starting air. The air compressor discharge line is just the source of the air, and the engine governor manages speed once the engine is running, not the starting pressure.

2. The Fuel Feed and Drain System provides a signal to the FADC/LOCOP when the fuel manifold pressure falls below which value?

A. 100 psig

B. 150 psig

C. 200 psig

D. 250 psig

Fuel manifold pressure is a direct indication of how much fuel is actually available to the engine. When that pressure drops to 150 psig, the Fuel Feed and Drain System sends a signal to the FADC/LOCOP to warn that fuel is not reaching the engine as it should. That signal prompts protective actions in the fuel control system and informs the crew, helping prevent fuel starvation from damaging the engine. The 150 psig threshold is chosen to provide timely protection: high enough to catch impending fuel issues early, but not so sensitive that normal pressure fluctuations cause unnecessary alarms. If the threshold were set much lower, like 100 psig, warnings could come too late; if it were higher, such as 200 or 250 psig, alerts could occur during normal operation.

3. The Transfer Gearbox (TGB) transmits power for starting the Gas Turbine Engine (GTE) drive train from which engine?

A. Model 350-KS4 engine

B. Model 250-KS4 engine

C. Model 150-KS4 engine

D. Model 250-KS2 engine

During start, the transfer gearbox acts as the bridge that delivers drive to spin the main gas turbine's drive train using a dedicated starting source. In this setup, the starting source is the Model 250-KS4 engine. Its power is routed through the transfer gearbox to the GTE drive train, providing the initial torque to bring the engine up to speed. Once the turbine is running, the starting source is disengaged and the GTE drives itself via its own power. The other engine variants listed are not used as the starting source in this configuration because they don't provide the required torque or compatibility for this setup.

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4. What transmits power from the starting RIMMS to the high speed reducing gear?

A. Starter motor

B. Clutch

C. Drive shaft

D. High speed gearbox

The starting device must couple its fast, low-torque output into the gear train that will drive the compressor and shaft system. The high speed gearbox is the component that actually transmits and converts that energy: it accepts the rapid input from the starting RIMMS and lowers the speed while increasing torque to feed the high speed reducing gear. The drive shaft is only the mechanical link, and the clutch mainly engages or disengages the connection; they don't provide the necessary speed-to-torque transformation by themselves. The starter motor supplies the energy, but the rotation is transferred to the next stage through the gearbox, making the high speed gearbox the correct choice.

5. What type of valve feeds fuel to the drain?

A. Spring loaded inlet check valve

B. Ball valve

C. Globe valve

D. Stop valve

One-way flow control is essential here: fuel must be allowed to move toward the drain, but it must not flow back into the fuel system when pressure changes. A spring-loaded inlet check valve fits this need because it opens to let fuel pass toward the drain when there is forward pressure, and the spring biases the valve shut to block reverse flow when pressure on the drain side drops or reverses. This ensures reliable draining without allowing fuel to backflow into the pump or supply lines. Ball valves, globe valves, and stop valves are primarily shutoff or throttling devices. They don't inherently prevent backflow in the drain line and therefore aren't ideal for feeding fuel to the drain where unidirectional flow is required.

6. Fuel nozzles receive fuel from which valve?

A. Flow divider valve

B. Shut-off valve

C. Fuel return valve

D. Pressure regulating valve

Fuel nozzles are fed by the flow divider. After the fuel is metered, it enters the flow divider, which splits the metered fuel into equal portions and routes them to each nozzle in the combustor. This equal distribution is crucial for uniform combustion and prevents hot spots. The other valves have different roles: a shut-off valve would stop flow to the engine, a fuel return valve sends unused fuel back, and a pressure regulating valve maintains system pressure but does not directly feed the nozzles.

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7. Which valve closes the 5th and 10th stage of bleed air?

A. Pilot air control valve

B. Bleed air shutoff valve

C. Engine bleed valve

D. Main fuel valve

Bleed air is taken from specific compressor stages and routed to pneumatic systems, with valves that isolate or regulate which stages feed the system. The valve that closes the 5th and 10th stage bleed air is the pilot air control valve. It acts as the gate for the pilot air portion of the system, so when commanded it shuts off the lines from those stages, isolating that bleed air supply. This selective closure is important to control pressures and prevent bleed air from reaching the systems when not needed. The other valves either shut off all bleed air, regulate overall bleed flow, or aren't directly responsible for isolating those particular stages, and thus aren't the best fit for this function.

8. Which statement best describes the role of the fuel nozzle in the combustor?

A. Delivers fuel in a spray pattern that provides the best air-fuel mixture for combustion

B. Filters fuel before delivery

C. Ignites the fuel-air mixture

D. Regulates fuel temperature

The fuel nozzle's job is to atomize and deliver fuel as a fine spray into the combustor so it can mix with the incoming air to form a uniform air-fuel mixture for combustion. Fine droplets evaporate quickly and spread evenly, which helps ignite and burn the fuel consistently across the chamber, improving efficiency and reducing emissions. Filtering the fuel, initiating ignition, and regulating fuel temperature are handled by other parts of the system, not the nozzle itself.

9. What happens while starting the RIMS if the emergency stop reaches 13,000 RPM?

A. Temperature rises above 800 F

B. Temperature at 900 F

C. Less than 600 F

D. Temperature reaches 1200 F

When starting the RIMS, the system is set up so that ignition and fuel flow are controlled to avoid overheating during the start sequence. If the emergency stop is reached at a high speed (13,000 RPM), fuel and ignition are cut off. The rotor may still be turning due to inertia, but without combustion there's no heat build-up in the combustor. So the temperature stays well below ignition levels, resulting in a temperature under 600 F. If fuel were allowed and ignition occurred, temperatures would rise much higher (800–1200+ F), but with the emergency stop active, that heat source isn't present.

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10. Which statement about FADAC/LOCAP is true?

A. Fully operational in standby mode

B. Fully operational in manual mode

C. Fully operational in normal mode

D. Not operational at all times

FADAC/LOCAP is designed to run its automatic control and protection functions during normal engine operation. In normal mode, the system actively and autonomously manages fuel control, monitoring, and safety interlocks to keep the engine operating safely and efficiently. In standby mode, power or subsystems may be present, but the automatic control loop isn't fully engaged, so active regulation isn't guaranteed. In manual mode, an operator can override some functions, but automatic control and protections are typically limited or bypassed, so it isn't fully operational. The option that correctly describes the system as fully operational in normal mode aligns with its purpose and typical use, making it the best choice.

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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:

https://gsmaschool4.examzify.com

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

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