

IC "A" SCHOOL – AIRFLOW, H2S, REFRIGERANT PRACTICE TEST (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.

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 will all sample pipes be terminated by?**
 - A. A filter assembly
 - B. A valve
 - C. A pressure gauge
 - D. A sample bottle
- 2. Which PCB controls and drives the alphanumeric display LEDs, the bar graph LEDs and the alarm indicator LED?**
 - A. Alarm Interface Board
 - B. Display Board / Display Assembly
 - C. Power Board
 - D. Control Processor Board
- 3. What is the primary function of the control unit in the system?**
 - A. Power the system
 - B. Provide network connectivity
 - C. Monitor the system status and execute system commands
 - D. Houses the detectors
- 4. What are the two main components of the detector head?**
 - A. Sensor assembly and transmitter assembly
 - B. Power supply and housing
 - C. Detector array and readout module
 - D. Calibration unit and control module
- 5. How many volts is the battery in the indication and control panel?**
 - A. 12 VDC
 - B. 24 VDC
 - C. 120 VAC
 - D. 5 VDC
- 6. Amber Steady indicates what condition has occurred in the last 12 hours?**
 - A. All conditions normal
 - B. A fault exists
 - C. An alarm has occurred in the last 12 hours
 - D. The most recent measurement exceeded the alarm level

7. How is the control unit powered?

- A. 24 VDC from the ship's battery
- B. 115 VAC, single-phase power from the ship's lighting distribution system
- C. 12 VDC regulated supply
- D. 115 VAC, single-phase power from shore distribution

8. What are the three units of the airflow system?

- A. Thermostat, humidistat, and vent
- B. Indicating and control panel, a pinwheel sensor unit, an airflow remote alarm unit
- C. Filter housing, duct, and sensor
- D. A damper actuator, a fan, and a controller

9. The test push button is used to ...

- A. Momentarily interrupt input line voltage to test the audible alarms and flag drop circuit
- B. Reset the alarm
- C. Silence the audible alarms
- D. Adjust the alarm set point

10. Which module is responsible for analyzing the gas signatures and triggering actions?

- A. The pump block
- B. The network module
- C. The spur kit
- D. The display panel

Answers

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

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Explanations

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1. What will all sample pipes be terminated by?

- A. A filter assembly
- B. A valve
- C. A pressure gauge
- D. A sample bottle

The end of every sample line is protected by a filter assembly to keep the sample clean and protect the sampling equipment. The filter traps particulates, condensate, and any potential contaminants that could alter the gas reading, clog the line, or damage pumps and analyzers. While a valve, pressure gauge, or sample bottle all play important roles in the sampling process, they don't serve the protective, contaminant-blocking function at the termination point that a filter provides.

2. Which PCB controls and drives the alphanumeric display LEDs, the bar graph LEDs and the alarm indicator LED?

- A. Alarm Interface Board
- B. Display Board / Display Assembly
- C. Power Board
- D. Control Processor Board

LED indicators like alphanumeric digits, bar graphs, and an alarm LED need specialized drive circuitry to manage multiplexing, brightness, and timing. The Display Board / Display Assembly serves this role, taking data from the Control Processor Board and turning it into the signals that light each segment or bar at the right moment. It handles the current limiting and multiplexing required to drive multiple types of displays, so the alphanumeric characters can be scanned, the bar graph segments can be lit proportionally, and the alarm indicator can flash or stay on as needed. The Control Processor Board provides the content and the timing logic, but it relies on the display board to physically illuminate the LEDs. The Power Board simply supplies power to the system, and the Alarm Interface Board handles alarm signaling routes rather than driving the displays themselves. Therefore, the Display Board / Display Assembly is the correct choice.

3. What is the primary function of the control unit in the system?

- A. Power the system
- B. Provide network connectivity
- C. Monitor the system status and execute system commands
- D. Houses the detectors

The control unit serves as the central brain of the system, continuously monitoring sensor inputs and deciding what actions to take. It reads data from detectors and other sensors, checks it against preset limits, and when something out of range is detected, it sends commands to operate equipment—adjusting fans, valves, or pumps, sounding alarms, or isolating a section to keep everything safe. It may also log events and support safe shutdown procedures if needed. This makes it distinct from simply providing power (that's the power supply), enabling network access (that's handled by separate communication modules), or housing the detectors (the sensors themselves and their enclosures).

4. What are the two main components of the detector head?

A. Sensor assembly and transmitter assembly

B. Power supply and housing

C. Detector array and readout module

D. Calibration unit and control module

The detector head is built to both sense the gas and report that information. The two main parts that do these jobs are the sensor assembly, which is the actual sensing element (whether electrochemical, infrared, or another sensing technology), and the transmitter assembly, which conditions the sensor signal and sends a readable output to the monitoring system. The other options cover support or broader system components, not the core head itself: power supply/housing are general hardware, a detector array and readout module imply a different type of imaging or multi-sensor setup, and a calibration unit with a control module are separate maintenance and control subsystems. So the sensor plus transmitter pair is the essential combination inside the detector head.

5. How many volts is the battery in the indication and control panel?

A. 12 VDC

B. 24 VDC

C. 120 VAC

D. 5 VDC

Indication and control panels run on a DC power source because it reliably powers meters, lights, alarms, sensors, and relay coils. A 24 VDC battery is used because it provides enough voltage to drive these loads without requiring excessive current or bulky wiring, while staying within a safe, standard level for industrial control components. 24 VDC is a common, readily available standard for such panels, making it easy to source relays, PLC inputs, and indicators that all expect that voltage. Using 12 VDC would mean higher current for the same power, increasing wiring and heat; 5 VDC is typically reserved for microelectronics rather than powering the whole panel; and 120 VAC would be mains power rather than a battery voltage, which changes safety and isolation requirements.

6. Amber Steady indicates what condition has occurred in the last 12 hours?

A. All conditions normal

B. A fault exists

C. An alarm has occurred in the last 12 hours

D. The most recent measurement exceeded the alarm level

Amber steady shows that an alarm event happened within the recent time window. It doesn't mean everything is normal or that a fault is currently active, and it isn't simply stating that the latest reading exceeded the alarm level. Instead, this status flags that an alarm occurred sometime in the last 12 hours and the system is now in a steady state regarding that event. When you see it, you'd check the alarm history to identify what happened and when, and determine if action is needed.

7. How is the control unit powered?

- A. 24 VDC from the ship's battery
- B. 115 VAC, single-phase power from the ship's lighting distribution system**
- C. 12 VDC regulated supply
- D. 115 VAC, single-phase power from shore distribution

The control unit is designed to run off the ship's standard AC electrical system, specifically 115 VAC single-phase from the lighting distribution. This keeps the unit tied to the ship's regular power infrastructure, ensuring a stable, readily available supply without needing battery power or shore connections. Using 115 VAC from the ship's lighting distribution also means the unit shares the same protective devices and power management as other equipment on board, making wiring and operation simpler and safer. Power from a ship's battery (DC) would require conversion and isn't the intended supply for this unit, while shore power is only available when the vessel is connected to shore facilities. The 12 VDC option would imply a different internal design and regulation that isn't indicated for this device.

8. What are the three units of the airflow system?

- A. Thermostat, humidistat, and vent
- B. Indicating and control panel, a pinwheel sensor unit, an airflow remote alarm unit**
- C. Filter housing, duct, and sensor
- D. A damper actuator, a fan, and a controller

In airflow systems, you typically have three functional units that cover monitoring, display/control, and alerting. The indicating and control panel serves as the hub, showing status and allowing operators to adjust settings. The pinwheel sensor unit directly measures airflow speed, providing the actual flow data the system relies on. The airflow remote alarm unit picks up these readings and can trigger alarms remotely if airflow drops below safe levels or if a fault is detected. Together, these three units ensure you can monitor airflow, control it, and be alerted to problems quickly. Other options mix in environmental controls (like temperature or humidity controls) or simply list structural components (duct, filter housing) or drive components (damper, fan, controller) that don't correspond to the dedicated three-unit airflow monitoring and safety setup described.

9. The test push button is used to ...

- A. Momentarily interrupt input line voltage to test the audible alarms and flag drop circuit**
- B. Reset the alarm
- C. Silence the audible alarms
- D. Adjust the alarm set point

The test push button is used to momentarily interrupt the input line voltage to the alarm circuit so you can verify that the audible alarms will sound and the flag drop circuit operates. This is a built-in self-test to confirm the notification path and indicator response without needing a real fault. Resetting the alarm, silencing the alarms, or changing the set point are handled by other controls and do not simulate a test of the alarm system.

10. Which module is responsible for analyzing the gas signatures and triggering actions?

- A. The pump block
- B. The network module**
- C. The spur kit
- D. The display panel

Understanding how the system processes gas readings and initiates responses relies on knowing where decisions are made. The network module serves as the central processing and communications hub. It collects sensor data, analyzes the gas signatures, compares them to safe thresholds, and then issues commands to trigger actions—such as alarms, ventilation, or isolation—by talking to the appropriate actuators and safety devices. The pump block is mainly for moving gas or liquids, not evaluating their composition. The spur kit is an accessory for connections, not data processing. The display panel shows information to the operator, but it doesn't perform the analysis or initiate actions on its own; it relies on the network module to determine when to alert or react.

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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://icaschoolairflowh2srefrigerant.examzify.com>

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

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