

SOAR Academy Practice Exam (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. What is the diameter of the rope used?**
 - A. 11 mm**
 - B. 9 mm**
 - C. 13 mm**
 - D. 10 mm**

- 2. The Frisker (Ludlum 26-1) is described as detecting which radiation types and used for what purpose?**
 - A. Only gamma radiation**
 - B. Alpha, Beta, Gamma radiation; Used for decon**
 - C. Neutron radiation**
 - D. Ultraviolet radiation**

- 3. What are the CO2 alarm thresholds on the MultiRAE 6-gas?**
 - A. Low 1,000; High 5,000; IDLH 10,000**
 - B. Low 5,000; High 30,000; IDLH 40,000**
 - C. Low 2,000; High 20,000; IDLH 30,000**
 - D. Low 10,000; High 40,000; IDLH 50,000**

- 4. What is the maximum vertical time stated for using the Yates Spec PAK harness?**
 - A. No time limit**
 - B. No more than 15 minutes vertically**
 - C. No more than 7 minutes vertically**
 - D. No more than 5 minutes vertically**

- 5. What is the rated breaking strength of the 11mm rope (G11)?**
 - A. 9,000 lbs**
 - B. 8,992 lbs**
 - C. 9,500 lbs**
 - D. 8,500 lbs**

- 6. Which radiation type is detected by a Personal Radiation Device (PRD)?**
- A. Gamma only**
 - B. Alpha and beta**
 - C. Gamma and neutron**
 - D. Neutron only**
- 7. Which device has GAS ID feature to identify chemical names from a gas sample?**
- A. QRAE**
 - B. ToxiRAE**
 - C. PID (VOC)**
 - D. MiniRAE 3000**
- 8. Which statement best describes when calcium gluconate should be used?**
- A. Indicated for fluoride poisoning**
 - B. Indicated for metal poisoning**
 - C. Indicated for pesticide residue**
 - D. Indicated for chlorine exposure**
- 9. Which configuration provides sensors for HCN and CO₂ in addition to the standard four gases?**
- A. QRAE 4-gas**
 - B. MiniRAE 3000**
 - C. PID (VOC)**
 - D. MultiRAE 6-gas**
- 10. Which detector uses a 10.6 eV bulb and can only detect substances with ionization potential ≤ 10.6 eV?**
- A. MX908**
 - B. QRAE**
 - C. PID**
 - D. MiniRAE 3000**

Answers

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

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Explanations

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1. What is the diameter of the rope used?

- A. 11 mm**
- B. 9 mm
- C. 13 mm
- D. 10 mm

The important idea here is choosing a rope diameter that can safely carry the required load while still fitting in the given setup. A rope's strength comes from its cross-sectional area, and that area is tied to the allowable stress of the material. So you determine the minimum area needed to carry the load with an adequate safety margin, then convert that area to a diameter using $A = \pi(d/2)^2$. In practice, you compare standard rope sizes and pick the smallest diameter that meets the load requirement and also fits inside the drum, guides, or other hardware. In this problem, that means selecting the diameter that is just large enough to handle the load safely but not so large that it won't fit. The other options are either too weak for the load or too bulky to fit, so the chosen diameter is the one that satisfies both conditions. When solving, you'd compute the required diameter from the load and material strength, then pick the smallest standard size that meets or exceeds that value while fitting the apparatus.

2. The Frisker (Ludlum 26-1) is described as detecting which radiation types and used for what purpose?

- A. Only gamma radiation
- B. Alpha, Beta, Gamma radiation; Used for decon**
- C. Neutron radiation
- D. Ultraviolet radiation

The Frisker is a handheld survey instrument designed for surface contamination checks. It is capable of detecting alpha, beta, and gamma radiation, which are the common forms of ionizing radiation you need to identify when cleanup or decontamination is involved. Detecting all three types lets you locate contaminated areas on surfaces so workers can scrub them effectively and prevent spread. It isn't used for neutrons, and ultraviolet light isn't ionizing radiation in this context, so those are not what this device is designed to detect.

3. What are the CO₂ alarm thresholds on the MultiRAE 6-gas?

- A. Low 1,000; High 5,000; IDLH 10,000
- B. Low 5,000; High 30,000; IDLH 40,000**
- C. Low 2,000; High 20,000; IDLH 30,000
- D. Low 10,000; High 40,000; IDLH 50,000

CO₂ thresholds on a MultiRAE 6-gas are set to match standard safety exposure levels so you can act appropriately. A low alarm at 5,000 ppm gives an early warning before reaching regulatory limits, a high alarm at 30,000 ppm indicates a serious level that requires immediate attention, and the IDLH threshold at 40,000 ppm marks a concentration immediately dangerous to life and health. These values align with common safety guidelines for CO₂: 5,000 ppm as the typical 8-hour exposure limit (TWA), 30,000 ppm as the short-term exposure limit (STEL), and 40,000 ppm as the IDLH level. In normal environments CO₂ is around 400 ppm, so these alarms provide timely warnings in confined spaces. Other options don't correspond to these widely used thresholds.

4. What is the maximum vertical time stated for using the Yates Spec PAK harness?

- A. No time limit**
- B. No more than 15 minutes vertically**
- C. No more than 7 minutes vertically**
- D. No more than 5 minutes vertically**

The important idea here is how long you can remain suspended in a vertical position while using the Yates Spec PAK harness. The device's guidelines specify a maximum of seven minutes of vertical time. This limit exists because staying suspended can lead to medical risks like suspension trauma, so keeping the vertical exposure short helps protect you and ensures you can be rescued or repositioned promptly. In practice, plan your vertical work so you stay within seven minutes, and have a rescue or horizontal/repositioning plan ready before you exceed that limit. The other timeframes don't match the harness' stated guidance, which is why seven minutes is the correct choice.

5. What is the rated breaking strength of the 11mm rope (G11)?

- A. 9,000 lbs**
- B. 8,992 lbs**
- C. 9,500 lbs**
- D. 8,500 lbs**

Rope strength is defined by the rated breaking strength—the maximum load the rope is specified to withstand before failing, based on standardized tests for its diameter and construction. For this 11mm G11 rope, the manufacturer lists the exact breaking strength as 8,992 pounds, which is about 40 kN. That precise value comes from the official test data; rounded figures like 9,000 or 9,500 pounds are simply approximations, not the official rating. Remember, the rated breaking strength is not the safe working load you should use in the field—you apply a safety factor to determine a practical working load.

6. Which radiation type is detected by a Personal Radiation Device (PRD)?

- A. Gamma only**
- B. Alpha and beta**
- C. Gamma and neutron**
- D. Neutron only**

The key idea is that a Personal Radiation Device is built to detect gamma radiation. Gamma rays are high-energy photons that can travel through air and clothing, so a compact detector worn on the body can sense their presence from a distance. In contrast, alpha and beta particles have very short ranges in air and are easily stopped by clothing or skin, making them hard to detect with a wearable device. Neutrons require specialized detectors and are not what a typical PRD is designed to monitor. So, gamma radiation is the type detected by a PRD.

7. Which device has GAS ID feature to identify chemical names from a gas sample?

- A. QRAE
- B. ToxiRAE
- C. PID (VOC)
- D. MiniRAE 3000**

Gas ID is a library-based feature for identifying specific chemicals from the VOC signal produced by a PID. It works by comparing the detected VOC response to a built-in database of known compounds and returning the most likely chemical names along with their approximate concentrations. The MiniRAE 3000 is designed as a PID-based VOC monitor and offers this Gas ID capability, making it possible to identify unfamiliar vapors in the field rather than just measuring their presence or concentration. The other devices listed are primarily gas monitors or toxic-gas detectors that may include a PID option for sensing VOCs but do not typically provide the Gas ID naming feature. So, the device that provides identification of chemical names from a gas sample is the MiniRAE 3000.

8. Which statement best describes when calcium gluconate should be used?

- A. Indicated for fluoride poisoning**
- B. Indicated for metal poisoning
- C. Indicated for pesticide residue
- D. Indicated for chlorine exposure

Calcium gluconate is used to treat fluoride poisoning. Fluoride ions can disrupt cellular processes and interfere with calcium in the body, leading to serious symptoms. Giving calcium gluconate supplies calcium ions that bind fluoride to form calcium fluoride, reducing the amount of free fluoride and helping reverse toxicity. This antidotal effect is why it's the best match for fluoride poisoning among the options. It isn't the standard antidote for metal poisoning, pesticide exposure, or chlorine exposure, which require different treatments and supportive care.

9. Which configuration provides sensors for HCN and CO₂ in addition to the standard four gases?

- A. QRAE 4-gas
- B. MiniRAE 3000
- C. PID (VOC)
- D. MultiRAE 6-gas**

In portable gas monitoring, the number and type of sensors determine what hazards you can detect. A baseline four-gas setup covers the common hazards: flammable gas (LEL), oxygen (O₂), carbon monoxide (CO), and hydrogen sulfide (H₂S). To monitor additional gases, you need a monitor that can be expanded with extra sensors. The six-gas configuration of the MultiRAE adds two more sensors, typically for hydrogen cyanide (HCN) and carbon dioxide (CO₂), so you can detect those hazards alongside the standard four. The other options are limited either to exactly four sensors or focus on VOCs rather than inorganic gases, so they can't reliably provide HCN and CO₂ in addition to the standard four.

10. Which detector uses a 10.6 eV bulb and can only detect substances with ionization potential ≤ 10.6 eV?

A. MX908

B. QRAE

C. PID

D. MiniRAE 3000

Photoionization detectors rely on ultraviolet light to ionize volatile organic compounds. A lamp that emits photons with 10.6 eV of energy can ionize molecules whose ionization potential is at or below that energy. When a molecule is ionized, the resulting charged particles create a current that the instrument measures, giving a signal proportional to the VOC concentration. Molecules with higher ionization potentials won't be ionized by this lamp, so they won't be detected by this method. That specific capability—the use of a 10.6 eV lamp to detect substances only if their ionization potential is 10.6 eV or lower—defines a photoionization detector.

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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://soaracademy.examzify.com>

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

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