

# Industrial Hygiene Exam 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

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- 1. What is the purpose of incident investigation in the IH program?**
  - A. To assign blame to workers.**
  - B. To determine root causes of exposures or incidents and prevent recurrence by implementing corrective actions.**
  - C. To document weather conditions during incidents.**
  - D. To schedule training sessions only after events.**
  
- 2. Which figure is associated with the development of OSHA and NIOSH and is considered the mother of occupational medicine?**
  - A. Bernardo Ramazzini**
  - B. Paracelsus**
  - C. Hippocrates**
  - D. Alice Hamilton**
  
- 3. Which of the following is NOT a characteristic of the dermis?**
  - A. Contains connective tissue with collagen and elastic fibers**
  - B. Laced with blood vessels**
  - C. Composed mainly of fatty tissue**
  - D. Hair follicles**
  
- 4. NOAEL and LOAEL in risk assessment refer to ...**
  - A. NOAEL is the highest exposure with adverse effects; LOAEL is the lowest exposure with no adverse effects observed**
  - B. NOAEL is the highest exposure with no adverse effects observed; LOAEL is the lowest exposure with adverse effects observed**
  - C. NOAEL is the lethal dose; LOAEL is the minimal lethal dose**
  - D. NOAEL and LOAEL relate to sampling frequency in air monitoring**

- 5. How do you interpret a respirator fit test result?**
- A. A pass means respirator is clean; a fail means you must wear double PPE.**
  - B. A pass indicates acceptable fit; a fail requires re-fit or change of respirator model or training.**
  - C. A pass indicates the respirator provides 100% protection regardless of seal.**
  - D. A pass is not required; fit testing is optional.**
- 6. Which topic is typically addressed in the exposure controls section of an SDS?**
- A. Transportation information.**
  - B. Exposure controls and PPE.**
  - C. Waste disposal details.**
  - D. Storage requirements.**
- 7. Which statement best describes the role of the trachea?**
- A. It filters blood**
  - B. It pumps oxygen into the blood**
  - C. It is the airway that conducts air to the lungs**
  - D. Digestive support**
- 8. How should you prioritize controls when multiple hazards are present?**
- A. Use the hierarchy of controls to prioritize engineering controls and elimination/substitution before administrative controls and PPE; evaluate cumulative risk.**
  - B. Start with PPE for all hazards.**
  - C. Only monitor exposures without implementing controls.**
  - D. Randomly select controls regardless of hazard type.**
- 9. How are organic solvent exposures typically measured?**
- A. Biological monitoring only**
  - B. Air sampling using sorbent tubes and GC/MS**
  - C. Surface wipe sampling**
  - D. Visual inspection**

**10. Which method is NOT a typical bioaerosol assessment method?**

**A. Culture**

**B. PCR**

**C. Immunoassays**

**D. Gravimetric mass measurement**

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## Answers

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

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## **Explanations**

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**1. What is the purpose of incident investigation in the IH program?**

- A. To assign blame to workers.**
- B. To determine root causes of exposures or incidents and prevent recurrence by implementing corrective actions.**
- C. To document weather conditions during incidents.**
- D. To schedule training sessions only after events.**

The purpose of incident investigation in an IH program is to identify the root causes of exposures or incidents and prevent recurrence by implementing corrective actions. In practice, investigators examine what happened, gather evidence, talk with workers, review exposure data and control measures, and look for weaknesses in systems, equipment, procedures, training, and management. The goal is not to assign blame to individuals but to understand underlying factors that allowed the event to occur and to fix them. Using root-cause analysis helps distinguish immediate causes from deeper contributing factors, guiding actions such as engineering controls, procedural changes, maintenance improvements, enhanced training, and updated monitoring. After implementing corrective actions, the program should verify that the changes are effective to reduce risk going forward.

**2. Which figure is associated with the development of OSHA and NIOSH and is considered the mother of occupational medicine?**

- A. Bernardo Ramazzini**
- B. Paracelsus**
- C. Hippocrates**
- D. Alice Hamilton**

Alice Hamilton is recognized as the mother of occupational medicine because her pioneering work connected medical care with workplace hazards and spurred the systematic, science-based approach to protecting workers. She studied industrial diseases by investigating real factories and mines, documenting how exposures to substances like lead, arsenic, mercury, and benzene caused illness. Her meticulous fieldwork and case investigations helped shift thinking from blaming workers' habits or vague "miasmas" to identifying specific toxins and routes of exposure. Beyond documenting hazards, she helped establish industrial hygiene as a medical discipline—emphasizing medical surveillance, workplace inspections, and public health advocacy. Her efforts educated a generation of physician-advocates and influenced policymakers about the need to regulate hazardous exposures. That kind of forward-looking public health work laid essential groundwork for the regulatory framework that later culminated in agencies like OSHA and NIOSH, which formalized workplace safety and health protections. Bernardo Ramazzini is often noted as the father of occupational medicine for his early treatise on workers' diseases, Paracelsus contributed foundational toxicology ideas, and Hippocrates founded early principles of medicine. But the title of the mother of occupational medicine is most closely associated with Alice Hamilton.

3. Which of the following is NOT a characteristic of the dermis?
- A. Contains connective tissue with collagen and elastic fibers
  - B. Laced with blood vessels
  - C. Composed mainly of fatty tissue**
  - D. Hair follicles

The dermis is a lively, vascular connective tissue layer that gives skin strength and elasticity. It is rich in collagen and elastic fibers, providing structural support, and it contains a network of blood vessels that nourish the skin and support sensation. Hair follicles are housed in the dermis along with glands like sebaceous and sweat glands. Fatty tissue, however, is not a primary component of the dermis—it sits mainly in the underlying hypodermis (subcutaneous layer), which stores fat for insulation and energy. So the statement about being composed mainly of fatty tissue isn't a feature of the dermis; that characteristic belongs to the subcutaneous layer.

4. NOAEL and LOAEL in risk assessment refer to ...
- A. NOAEL is the highest exposure with adverse effects; LOAEL is the lowest exposure with no adverse effects observed
  - B. NOAEL is the highest exposure with no adverse effects observed; LOAEL is the lowest exposure with adverse effects observed**
  - C. NOAEL is the lethal dose; LOAEL is the minimal lethal dose
  - D. NOAEL and LOAEL relate to sampling frequency in air monitoring

Think of how exposure levels relate to observed effects in a study. The highest exposure at which no adverse effects are seen is NOAEL. The lowest exposure at which adverse effects are observed is LOAEL. These two points define the threshold range used in risk assessment: NOAEL helps support safe exposure references when a clear no-effect level is identified, and LOAEL provides a lower bound when effects appear at some exposure level. This framework underpins how reference doses and occupational limits are developed, often applying uncertainty factors to account for differences between study animals and humans and other data gaps. If there isn't a true NOAEL, regulators may rely on the LOAEL together with additional factors or use modeling approaches to estimate a benchmark. Why the other statements don't fit: the first statement swaps the meanings of NOAEL and LOAEL. The third statement uses lethal doses, which are a different toxicology concept (acute toxicity and LD50), not NOAEL/LOAEL. The fourth statement incorrectly ties these terms to how often air samples are collected, which is unrelated to observed effects.

## 5. How do you interpret a respirator fit test result?

- A. A pass means respirator is clean; a fail means you must wear double PPE.
- B. A pass indicates acceptable fit; a fail requires re-fit or change of respirator model or training.**
- C. A pass indicates the respirator provides 100% protection regardless of seal.
- D. A pass is not required; fit testing is optional.

A respirator fit test result shows whether the tight-fitting facepiece actually seals on your face. A passing result means the fit test did not detect a leak and the chosen model and size provide an acceptable fit for you under the test conditions. If it fails, you should re-don and re-fit, receive retraining on proper donning, or try a different model or size and then re-test. Remember that a pass does not guarantee 100% protection in real work conditions; movement, facial expressions, and facial hair can affect the seal, so a user seal check is still needed every time you wear the respirator. Fit testing is typically required for tight-fitting respirators, not optional.

## 6. Which topic is typically addressed in the exposure controls section of an SDS?

- A. Transportation information.
- B. Exposure controls and PPE.**
- C. Waste disposal details.
- D. Storage requirements.

The main idea is to prevent workers from being exposed to the chemical. The exposure controls section of an SDS focuses on how to achieve that through engineering controls, administrative measures, and personal protective equipment. It typically lists any occupational exposure limits, outlines engineering controls like ventilation or enclosure to reduce airborne concentrations, and specifies the PPE required (gloves, eye protection, respirators) along with guidance on selection, use, and maintenance. This is the part of the SDS that tells you how to keep exposure within safe limits and what protective gear is necessary if exposure cannot be fully controlled. Other topics like transportation information, waste disposal details, or storage requirements belong in different sections and are not about controlling worker exposure in the work environment.

7. Which statement best describes the role of the trachea?

- A. It filters blood
- B. It pumps oxygen into the blood
- C. It is the airway that conducts air to the lungs**
- D. Digestive support

The trachea's role is to conduct air to the lungs. It acts as the main airway, a flexible tube supported by cartilage rings that keeps the passage open from the larynx down to the bronchi. Its lining has cilia and mucus to trap and move debris, helping to warm and humidify air as it travels toward the lungs. Gas exchange, where oxygen moves into the blood and carbon dioxide is released, happens in the alveoli of the lungs—not in the trachea. That's why statements about filtering blood or pumping oxygen into the blood (or digestive support) aren't describing the trachea's function—the trachea simply transports air to the places where gas exchange occurs.

8. How should you prioritize controls when multiple hazards are present?

- A. Use the hierarchy of controls to prioritize engineering controls and elimination/substitution before administrative controls and PPE; evaluate cumulative risk.**
- B. Start with PPE for all hazards.
- C. Only monitor exposures without implementing controls.
- D. Randomly select controls regardless of hazard type.

The main idea is to use the hierarchy of controls to manage risk when several hazards are present, aiming to remove or reduce hazards at the source before relying on worker actions or protective gear. If you can eliminate a hazard or substitute a less dangerous option, do that first. If elimination isn't possible, implement engineering controls that reduce exposure at the source, such as enclosure, containment, or ventilation. Only after these are in place should administrative controls (like training, procedures, and work practices) be used to lower exposure, and PPE should be reserved as the last resort since it depends on correct use and does not remove the hazard itself. When multiple hazards exist, it's crucial to evaluate cumulative risk—the overall exposure from all hazards combined—and choose controls that reduce the total burden, ideally addressing more than one hazard or tackling the biggest contributors to risk. This ensures protection across the whole work environment rather than focusing on a single hazard. Starting with PPE, monitoring without controlling hazards, or randomly selecting controls fail to systematically reduce risk and neglect how the hazards interact, which is why they're not appropriate approaches.

## 9. How are organic solvent exposures typically measured?

- A. Biological monitoring only
- B. Air sampling using sorbent tubes and GC/MS**
- C. Surface wipe sampling
- D. Visual inspection

Measuring airborne solvent vapors in the worker's breathing zone is the direct way to assess inhalation exposure to organic solvents. This is typically done with active air sampling: air is drawn through a sorbent tube that captures the solvent vapors, and the collected sample is analyzed in the lab, usually by gas chromatography-mass spectrometry (GC/MS). This combination provides a quantitative concentration (often mg/m<sup>3</sup>) for each solvent present, with high specificity even in mixtures, which is essential for comparing to occupational exposure limits and for risk assessment. Air sampling using sorbent tubes and GC/MS is especially appropriate because the primary exposure route for volatile solvents is inhalation, and this method yields accurate, trace-level measurements of the actual concentrations workers are breathing during their shift. It also allows assessment over a defined sampling period (time-weighted average or short-term) to reflect exposure conditions. Biological monitoring measures the internal dose and can be influenced by individual metabolism and timing relative to exposure, so it isn't the standard method for routine exposure assessment. Surface wipe sampling assesses contamination on surfaces, not the air concentration, and visual inspection does not quantify exposure at all.

## 10. Which method is NOT a typical bioaerosol assessment method?

- A. Culture
- B. PCR
- C. Immunoassays
- D. Gravimetric mass measurement**

Bioaerosol assessment focuses on identifying and quantifying biological components in the air, such as viable microorganisms, microbial DNA, or specific antigens. Culture reveals which organisms are alive and able to form colonies; PCR detects genetic material from organisms present in the sample; immunoassays identify microbial antigens or biomarkers. Gravimetric mass measurement, by contrast, only tells you the total particle mass collected on a filter or sampler, without distinguishing biological from nonbiological material and without providing information on viability or identity. Because of that lack of specificity to biological content, gravimetric mass measurement is not a typical standalone bioaerosol assessment method; it's a general particulate matter metric that may be used alongside bioaerosol methods to gauge overall dust exposure, but it doesn't characterize the bio components themselves.

## 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](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://industrialhygiene1.examzify.com>**

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

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