

# Certified Pulmonary Function Technologist (CPFT) Practice Exam (Sample)

## Study Guide



**Everything you need from our exam experts!**

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**SAMPLE**

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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**

- 1. What is the gas concentration slope percent for CO<sub>2</sub> calibration in a blood gas analyzer?**
  - A. 5%**
  - B. 10%**
  - C. 15%**
  - D. 20%**
- 2. What is considered the best calibration device for a spirometer?**
  - A. 1 L syringe**
  - B. 3 L syringe**
  - C. 5 L syringe**
  - D. Calibration gas mixture**
- 3. Which factor can lead to an increase in lung volumes during testing?**
  - A. Age**
  - B. Physical fitness**
  - C. Obesity**
  - D. Smoking**
- 4. What impact does smoking have on pulmonary function test results?**
  - A. Decreases lung capacity**
  - B. Increases lung capacity**
  - C. No impact on results**
  - D. Only affects FEV<sub>1</sub>**
- 5. What does a high FEV<sub>1</sub>/FVC ratio typically indicate?**
  - A. Obstructive lung disease**
  - B. Restrictive lung pattern**
  - C. Normal lung function**
  - D. Severe airflow limitation**

- 6. What measurement is essential for assessing lung function related to airflow obstruction?**
- A. Forced Vital Capacity (FVC)**
  - B. Peak Expiratory Flow (PEF)**
  - C. Forced Expiratory Volume in 1 second (FEV1)**
  - D. Residual Volume (RV)**
- 7. What does linearity refer to in measurement terms?**
- A. Consistent results regardless of variability**
  - B. Multiple measurements across a clinical range**
  - C. The average result of repeated tests**
  - D. Measurements that deviate significantly from expectation**
- 8. What type of bronchus is typically used for diagnostic procedures?**
- A. Flexible bronch**
  - B. Rigid bronch**
  - C. Double-lumen bronch**
  - D. Balloon bronch**
- 9. What is the normal FEV1 percentage?**
- A. 60%**
  - B. 70%**
  - C. 80%**
  - D. 90%**
- 10. Which thermal tachometer is specifically used in a helium gas analyzer?**
- A. Piezoresistive sensor**
  - B. Thermocouple**
  - C. Wheatstone bridge**
  - D. Capacitance sensor**



## **Answers**

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

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## **Explanations**

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**1. What is the gas concentration slope percent for CO<sub>2</sub> calibration in a blood gas analyzer?**

- A. 5%
- B. 10%**
- C. 15%
- D. 20%

The gas concentration slope percent for CO<sub>2</sub> calibration in a blood gas analyzer is typically set at 10%. This value is critical because it reflects the accuracy of the analyzer's performance in detecting CO<sub>2</sub> levels in blood samples. Calibration ensures that the analyzer can provide precise and reliable results, as a slope concentration of 10% indicates a certain level of sensitivity and responsiveness to changes in CO<sub>2</sub> concentration, which is essential for diagnosing and managing respiratory and metabolic conditions. In blood gas analysis, CO<sub>2</sub> is a vital parameter, and understanding its concentration helps clinicians assess a patient's acid-base balance and respiratory function. A calibration slope that is set appropriately allows for accurate linearity in measurement and assures that any detected changes in CO<sub>2</sub> levels are reflective of true physiological changes rather than measurement error. Thus, a 10% slope signifies that the analyzer is optimized for performance in this important area of patient care.

**2. What is considered the best calibration device for a spirometer?**

- A. 1 L syringe
- B. 3 L syringe**
- C. 5 L syringe
- D. Calibration gas mixture

The best calibration device for a spirometer is typically a 3 L syringe. This size is preferred because it aligns with the capacity range that many spirometers are designed to measure accurately. When using a 3 L syringe for calibration, it's essential to check that the spirometer is able to accurately record this volume, as it is a common value used during standard testing. A 1 L syringe may not provide enough volume for calibration to cover the full range of the spirometer's capabilities, particularly if the spirometer is expected to measure larger tidal volumes or vital capacities. Similarly, while a 5 L syringe can be used for calibration, it is often too large for certain spirometer designs that might not handle such high volumes effectively, thus increasing the risk of inaccuracies. Calibration gas mixtures are useful for certain types of spirometry testing, particularly in assessing gas exchange function, but they do not serve as primary calibration devices for volume measurement in the same way that a syringe does. Using a 3 L syringe presents a practical approach for ensuring that spirometers remain accurate and reliable during patient assessments, thus making it the preferred choice in clinical settings.

**3. Which factor can lead to an increase in lung volumes during testing?**

- A. Age
- B. Physical fitness**
- C. Obesity
- D. Smoking

An increase in lung volumes during testing is often associated with physical fitness. When individuals are physically fit, they typically have stronger respiratory muscles and a more efficient respiratory system. This enhanced muscular strength allows for better expansion of the lungs, leading to greater lung volumes. Regular aerobic exercise increases the demand for oxygen, prompting adaptations in the respiratory system, such as improved lung capacity and ventilation efficiency. This can also help to enhance overall endurance and performance, contributing to increased vital capacity and total lung capacity measurements during pulmonary function testing. While age, obesity, and smoking can have significant effects on lung function, typically leading to reductions in lung volumes, physical fitness stands out as a factor that is positively correlated with increased lung volumes during testing.

**4. What impact does smoking have on pulmonary function test results?**

- A. Decreases lung capacity**
- B. Increases lung capacity
- C. No impact on results
- D. Only affects FEV1

Smoking has a significant negative impact on pulmonary function test results, primarily by decreasing lung capacity. This reduction occurs due to the damaging effects of smoke on lung tissue, leading to inflammation and a loss of elastic recoil. Over time, exposure to the harmful substances in tobacco smoke can result in chronic bronchitis, emphysema, and other obstructive lung diseases, which are reflected in decreased forced vital capacity (FVC) and other relevant measurements in pulmonary function tests. As individuals who smoke tend to develop airway obstruction and reduced airflow, their FEV1 (forced expiratory volume in one second) levels would also typically decrease. However, it's important to note that the impact of smoking extends beyond just FEV1; it affects overall lung capacity and function. Thus, stating that smoking only affects FEV1 does not fully capture the extent of its detrimental effects on the lungs.

**5. What does a high FEV1/FVC ratio typically indicate?**

- A. Obstructive lung disease**
- B. Restrictive lung pattern**
- C. Normal lung function**
- D. Severe airflow limitation**

A high FEV1/FVC ratio generally indicates a restrictive lung pattern. In restrictive lung diseases, such as pulmonary fibrosis or other conditions where lung expansion is impaired, both FEV1 (forced expiratory volume in one second) and FVC (forced vital capacity) are reduced, but the volume of air expelled in the first second (FEV1) maintains a relatively higher proportion of the total volume (FVC). As a result, the FEV1/FVC ratio remains normal or can be increased. Normal lung function typically shows an FEV1/FVC ratio above 70% or greater. A high ratio does not indicate obstruction, which is characterized by a lower FEV1/FVC ratio due to disproportionately low FEV1 compared to FVC. Therefore, this data underlines that restrictive lung patterns are the correct association with a high FEV1/FVC ratio.

**6. What measurement is essential for assessing lung function related to airflow obstruction?**

- A. Forced Vital Capacity (FVC)**
- B. Peak Expiratory Flow (PEF)**
- C. Forced Expiratory Volume in 1 second (FEV1)**
- D. Residual Volume (RV)**

Forced Expiratory Volume in 1 second (FEV1) is critical for assessing lung function related to airflow obstruction because it measures the volume of air a person can forcibly exhale in the first second of a breath. This measurement is particularly significant in diagnosing conditions such as asthma and chronic obstructive pulmonary disease (COPD), where airflow limitation is a hallmark characteristic. A reduced FEV1 indicates obstruction in the airways, as the patient may not be able to expel air freely, reflecting the severity of the condition and helping guide treatment. While Forced Vital Capacity (FVC) and Peak Expiratory Flow (PEF) also provide valuable information regarding lung function, FEV1 is specifically focused on the rate of airflow during the initial part of forced exhalation, making it a direct indicator of obstruction. Residual Volume (RV) measures the amount of air remaining in the lungs after a forced exhalation and does not provide information on airflow limitation during expiration. This distinction emphasizes the importance of FEV1 in evaluating respiratory diseases characterized by airflow restriction.

## 7. What does linearity refer to in measurement terms?

- A. Consistent results regardless of variability
- B. Multiple measurements across a clinical range**
- C. The average result of repeated tests
- D. Measurements that deviate significantly from expectation

Linearity in measurement terms refers to the ability of a measurement system to produce results that are directly proportional to the concentration or amount of a specific analyte across a defined clinical range. This means that as the concentration of the analyte increases or decreases, the measurement should reflect these changes accurately without distortion. Option B correctly captures this concept by highlighting the importance of obtaining multiple measurements across a clinical range, which demonstrates a system's linear response. This is crucial in ensuring that the measurements are reliable and can be used to make valid clinical decisions. Other options do not align with the definition of linearity. The idea of consistent results regardless of variability relates more to precision and reliability, while the average result of repeated tests pertains to accuracy or bias. Measurements that deviate significantly from expectation highlight a lack of linearity or potential issues in the measurement system. Hence, the emphasis on measuring across a clinical range is essential for establishing the linearity of a testing method.

## 8. What type of bronchus is typically used for diagnostic procedures?

- A. Flexible bronch**
- B. Rigid bronch
- C. Double-lumen bronch
- D. Balloon bronch

The flexible bronchus is the type commonly used for diagnostic procedures due to its versatility and ease of use. This instrument is designed to navigate through the branching structures of the respiratory system with minimal discomfort to the patient. Its smaller diameter allows for insertion through the nasal passage or mouth, and it can access the smaller bronchi, which is essential for obtaining samples and visualizing areas of the lungs that may be affected by disease. Flexible bronchoscopy facilitates various procedures, including biopsies, brushing, and lavage, which are crucial for diagnosing conditions like infections, tumors, or inflammation. Additionally, the capability of flexible bronchoscopes to accommodate various attachments and advanced imaging technologies enhances their diagnostic utility. In contrast, the rigid bronchus is generally used in different contexts, such as when larger instruments are needed or for procedures under general anesthesia. While it has its place, it is less commonly utilized for routine diagnostic procedures compared to the flexible bronch. Double-lumen bronchoscopes, designed primarily for specific types of surgeries and ventilatory support, are not typically used for diagnostic evaluations. Balloon bronchoscopes are less common and often associated with particular therapeutic interventions rather than diagnostics. Overall, the flexible bronchus stands out as the most practical choice for a wide range of diagnostic

**9. What is the normal FEV1 percentage?**

- A. 60%
- B. 70%
- C. 80%**
- D. 90%

The normal FEV1 (Forced Expiratory Volume in one second) percentage typically refers to the ratio of the FEV1 to the forced vital capacity (FVC) expressed as a percentage, which is a key metric in assessing lung function, particularly in diagnosing obstructive and restrictive airway diseases. In healthy individuals, the FEV1/FVC ratio is generally expected to be around 80%, indicating that approximately 80% of the total volume of air can be forcibly expelled in the first second of a maximal expiration. This percentage is considered a benchmark for normal respiratory function in adults, reflecting efficient lung mechanics. Therefore, recognizing that 80% is the threshold that defines normal function is crucial in evaluating and interpreting pulmonary function tests. Other values like 60%, 70%, or 90% represent deviations from the norm and could indicate varying degrees of obstruction or restriction in lung function, thus they are not considered normal.

**10. Which thermal tachometer is specifically used in a helium gas analyzer?**

- A. Piezoresistive sensor
- B. Thermocouple
- C. Wheatstone bridge**
- D. Capacitance sensor

In the context of helium gas analysis, the Wheatstone bridge is particularly significant because it measures changes in resistance that occur in response to temperature fluctuations, which is a crucial function in a thermal tachometer. When helium gas flows through a thermal sensor, it affects the temperature of that sensor. The Wheatstone bridge configuration can detect these temperature changes by measuring the resulting resistance variations, thus providing accurate flow measurements of the helium. The other options serve different roles or principles. Piezoresistive sensors are more commonly used for pressure measurement rather than gas flow or composition. Thermocouples measure temperature directly, while capacitance sensors measure changes in capacitance but are not specifically optimized for flow measurement in the way that a Wheatstone bridge is designed to analyze resistance changes related to thermal flow characteristics in a gas like helium. Therefore, the Wheatstone bridge's functionality aligns best with the requirements of helium gas analysis, making it the appropriate choice in this scenario.



## 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://certifiedpulmonaryfunctiontechnologist-cpft.examzify.com>**

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