

Smog Repair Technician 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

- 1. Which mode will help in checking permanent trouble codes in a vehicle?**
 - A. Mode 8**
 - B. Mode 6**
 - C. Mode 9**
 - D. Mode 10**
- 2. The vehicle starts but runs poorly, with reduced power and check engine light on. Which fuse could be the issue?**
 - A. Fuse #30**
 - B. Fuse #33**
 - C. Fuse #25**
 - D. Fuse #40**
- 3. What results are provided by Mode 5 in the diagnostics?**
 - A. Live Data**
 - B. Clear DTCs**
 - C. Oxygen Sensor Test Results**
 - D. Stored DTCs**
- 4. What is the most likely cause of a cylinder starting at 30 psi and building up to 120 psi over multiple cranks during a compression test?**
 - A. Worn piston rings**
 - B. Cracked cylinder head**
 - C. Damaged cylinder wall**
 - D. Faulty head gasket**
- 5. For catalyst testing, what results should you see with gases that can indicate a bad catalytic converter?**
 - A. Low NO_x and high CO**
 - B. High NO_x and high CO**
 - C. Low HC and low CO**
 - D. Low CO₂ and high O₂**

- 6. Which smog component is most responsible for reducing NOx emissions in a modern vehicle?**
- A. Air filter**
 - B. Fuel injector**
 - C. Catalytic converter**
 - D. PCV valve**
- 7. Under what condition can a Test-Only smog station sublet an inspection?**
- A. When the vehicle owner requests it**
 - B. Only if they are unable to perform the inspection due to equipment failure and document it**
 - C. When they have too many vehicles waiting**
 - D. If another facility is nearby**
- 8. A vehicle with a P0174 code is experiencing rough idle and hesitation under acceleration. What is the most likely cause?**
- A. Defective mass airflow sensor**
 - B. Leaking intake manifold gasket**
 - C. Clogged catalytic converter**
 - D. Faulty throttle body**
- 9. If a car is running rich and shows STFT at -12% and LTFT at -15%, what is the potential issue?**
- A. A faulty oxygen sensor**
 - B. A malfunctioning mass air flow (MAF) sensor**
 - C. A clogged fuel filter**
 - D. Worn spark plugs**
- 10. What is a potential cause of poor fuel economy indicated by STFT of -8% and LTFT of -17%?**
- A. A bad spark plug**
 - B. A leaking fuel injector**
 - C. A worn air filter**
 - D. A faulty ECU**

Answers

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

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Explanations

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1. Which mode will help in checking permanent trouble codes in a vehicle?

- A. Mode 8**
- B. Mode 6**
- C. Mode 9**
- D. Mode 10**

The correct choice is Mode 10, which is specifically designed for accessing permanent trouble codes in a vehicle. These permanent trouble codes are significant because they indicate faults that have been detected by the vehicle's onboard diagnostic system, which persist even after the vehicle is turned off and back on. This mode allows technicians to retrieve these codes, offering insights into issues that may not be resolved simply by clearing other temporary codes. Understanding the distinction among the different modes can be crucial for proper diagnostics. Mode 8, for instance, is generally used for controlling specific vehicle components and functions, while Mode 6 focuses on monitoring specific diagnostic tests that have been conducted on the vehicle emissions. Mode 9 is typically used for retrieving vehicle information such as the vehicle identification number (VIN) and other important details. Hence, these modes serve different purposes and do not provide the same access to permanent trouble codes as Mode 10 does.

2. The vehicle starts but runs poorly, with reduced power and check engine light on. Which fuse could be the issue?

- A. Fuse #30**
- B. Fuse #33**
- C. Fuse #25**
- D. Fuse #40**

When diagnosing a vehicle that starts but runs poorly with reduced power and an active check engine light, it's essential to consider which systems could be affected by a blown fuse. The correct answer points to a fuse associated with the engine management or fuel system, which are critical for the vehicle's operation and can directly influence performance. In many vehicles, specific fuses are dedicated to the engine control unit (ECU), fuel injectors, ignition systems, or related components. If the fuse that powers these systems is blown, it could lead to poor engine performance and trigger the check engine light. Therefore, selecting the fuse tied to the vehicle's engine management system reflects a focused diagnosis on the components that might be causing the symptoms. In contrast, the other fuses listed might be related to non-essential accessories or systems that do not impact engine performance as directly. Understanding the wiring diagram or fuse box layout of the specific vehicle can provide insight into which fuse correlates with vital systems for correct functioning, reflecting why the identified fuse is pertinent to the presented issue.

3. What results are provided by Mode 5 in the diagnostics?

- A. Live Data**
- B. Clear DTCs**
- C. Oxygen Sensor Test Results**
- D. Stored DTCs**

Mode 5 in automotive diagnostics specifically pertains to the results of oxygen sensor tests. This mode provides details about the performance and functionality of oxygen sensors in a vehicle's emission control system. When you select Mode 5, you can access real-time data regarding the operation of these sensors, including their response times to changes in exhaust conditions and whether they are functioning within their designed parameters. This is crucial for assessing the vehicle's fuel efficiency and emissions output, as a malfunctioning oxygen sensor can lead to improper fuel-air mixtures, increased emissions, and potential failures during smog checks. The specific nature of the data provided by Mode 5 allows technicians to diagnose issues with oxygen sensors accurately, supporting the overall goal of ensuring compliance with emissions standards.

4. What is the most likely cause of a cylinder starting at 30 psi and building up to 120 psi over multiple cranks during a compression test?

- A. Worn piston rings**
- B. Cracked cylinder head**
- C. Damaged cylinder wall**
- D. Faulty head gasket**

A cylinder that starts with a low psi, such as 30 psi, and gradually builds up to a higher level like 120 psi over several cranks typically indicates issues related to sealing within the combustion chamber. Worn piston rings are a common culprit in such scenarios. When piston rings are worn, they do not maintain a proper seal against the cylinder walls, which can lead to low initial compression readings. As the engine is cranked over multiple times, the engine oil may temporarily help seal or improve the compression due to the oil coating the worn surfaces, which then leads to an increase in pressure. This phenomenon is especially noticeable in tests where the rings might not fully compress under initial test conditions but improve after a few cycles when oil is distributed better. In contrast, a cracked cylinder head or damaged cylinder wall would generally result in consistent low compression readings, as these issues tend to cause immediate loss of compression rather than a gradual increase. A faulty head gasket typically leads to one or more cylinders exhibiting similar low pressures across the board, rather than allowing any cylinder to build pressure significantly during cranking.

5. For catalyst testing, what results should you see with gases that can indicate a bad catalytic converter?

- A. Low NO_x and high CO**
- B. High NO_x and high CO**
- C. Low HC and low CO**
- D. Low CO₂ and high O₂**

In the context of catalytic converter testing, a critical aspect to evaluate is how well the converter is functioning in terms of reducing harmful emissions. A catalyst that is functioning properly will effectively reduce the levels of nitrogen oxides (NO_x), carbon monoxide (CO), and hydrocarbons (HC). High levels of NO_x and high levels of CO in the exhaust gases are indicative of a failing catalytic converter. This scenario occurs because a malfunctioning converter isn't efficiently converting the harmful gases as intended. Instead, the NO_x emissions remain elevated, reflecting incomplete combustion and poor management of nitrogen in the exhaust, while elevated CO levels indicate that the converter is not oxidizing carbon monoxide into carbon dioxide effectively. In contrast, other combinations of exhaust gas levels would indicate a differently functioning catalytic converter. For instance, low levels of hydrocarbons combined with low levels of carbon monoxide suggest that the converter is working effectively, as it is breaking down both types of emissions. Thus, understanding the relationship between these gases is key to diagnosing catalytic converter performance.

6. Which smog component is most responsible for reducing NO_x emissions in a modern vehicle?

- A. Air filter**
- B. Fuel injector**
- C. Catalytic converter**
- D. PCV valve**

The catalytic converter is a crucial component in modern vehicles that specifically addresses the reduction of nitrogen oxides (NO_x) emissions. It functions as a part of the vehicle's exhaust system, converting harmful pollutants into less harmful emissions before they are released into the atmosphere. In terms of its operation, the catalytic converter utilizes a catalyst, often made of precious metals like platinum, palladium, and rhodium. These materials facilitate chemical reactions that transform NO_x into nitrogen and oxygen, which are benign, or into nitrogen and water vapor. This process is especially important in meeting stringent environmental regulations that aim to minimize air pollution. While elements such as air filters, fuel injectors, and PCV valves play roles in the overall performance and emissions control of a vehicle, they are not primarily responsible for the specific reduction of NO_x emissions. Air filters help maintain optimal airflow into the engine, fuel injectors manage the fuel-air mixture delivered to the combustion chamber, and PCV valves regulate the engine's crankcase gases. However, the catalytic converter is specifically engineered for the chemical conversion of NO_x and is thus the correct choice for this question.

7. Under what condition can a Test-Only smog station sublet an inspection?

- A. When the vehicle owner requests it**
- B. Only if they are unable to perform the inspection due to equipment failure and document it**
- C. When they have too many vehicles waiting**
- D. If another facility is nearby**

A Test-Only smog station is permitted to sublet an inspection primarily in situations where they cannot perform the inspection themselves due to specific circumstances, such as equipment failure. In these cases, they must document the reason for subletting the inspection, ensuring transparency and maintaining regulatory compliance. This protocol is important for ensuring that every vehicle inspection meets the necessary standards and can be tracked for accountability. By requiring documentation, the regulations help to maintain the integrity of the emissions testing process and ensure that appropriate procedures are followed when challenges arise. The other scenarios presented do not align with the regulatory requirements for subletting inspections. For example, simply having a high volume of vehicles or the proximity of another facility does not justify subletting an inspection without adherence to the established protocol regarding equipment issues.

8. A vehicle with a P0174 code is experiencing rough idle and hesitation under acceleration. What is the most likely cause?

- A. Defective mass airflow sensor**
- B. Leaking intake manifold gasket**
- C. Clogged catalytic converter**
- D. Faulty throttle body**

A P0174 code indicates that the engine is running lean, which means there is an insufficient amount of fuel in the air-fuel mixture. When a vehicle presents symptoms such as rough idle and hesitation during acceleration, a leaking intake manifold gasket is a highly likely culprit. The intake manifold is responsible for distributing the air-fuel mixture to the engine's cylinders. If there is a leak in the intake manifold gasket, it can allow unmeasured air to enter the engine, further exacerbating the lean condition. This extra air can interfere with the engine's ability to maintain the correct air-fuel ratio, leading to performance issues such as rough idling and hesitation during acceleration. In contrast, the other choices represent issues that, while they could affect performance, do not directly correlate with the symptoms and the specific lean condition indicated by the P0174 code. A defective mass airflow sensor could cause incorrect readings and possibly also lead to a lean condition, but it would typically show more pronounced symptoms relating to acceleration. A clogged catalytic converter would likely result in loss of power or back pressure issues rather than a lean condition. Finally, while a faulty throttle body could create various drivability problems, its primary concern relates to air delivery rather than the detailed air

9. If a car is running rich and shows STFT at -12% and LTFT at -15%, what is the potential issue?

- A. A faulty oxygen sensor**
- B. A malfunctioning mass air flow (MAF) sensor**
- C. A clogged fuel filter**
- D. Worn spark plugs**

When a vehicle is running rich, it means that the engine is consuming too much fuel relative to the amount of air, resulting in an overly rich fuel mixture. The short-term fuel trim (STFT) and long-term fuel trim (LTFT) values provide insight into how the engine management system is adjusting fuel delivery in response to sensor data. In this scenario, negative STFT and LTFT values indicate that the engine control unit (ECU) is reducing fuel delivery to compensate for an excess of fuel. A malfunctioning mass air flow (MAF) sensor is likely to cause this rich condition because it measures the amount of air entering the engine. If the MAF sensor is providing incorrect readings, such as underreporting the air flow, the ECU may incorrectly perceive that there is less air than there actually is. As a result, the computer may continue injecting too much fuel, leading to a rich condition and the corresponding negative fuel trims as the system attempts to correct the mixture. The other potential issues listed do not directly explain the negative fuel trim values as clearly. A faulty oxygen sensor could lead to incorrect feedback, but it typically would manifest differently. A clogged fuel filter could affect fuel supply but would not specifically cause the negative fuel trims.

10. What is a potential cause of poor fuel economy indicated by STFT of -8% and LTFT of -17%?

- A. A bad spark plug**
- B. A leaking fuel injector**
- C. A worn air filter**
- D. A faulty ECU**

The indication of short-term fuel trim (STFT) at -8% and long-term fuel trim (LTFT) at -17% points to an issue related to fuel delivery. The negative values suggest that the engine control unit (ECU) is adjusting the fuel delivery to reduce the amount of fuel entering the combustion chamber, which frequently occurs due to excess fuel being delivered. A leaking fuel injector can cause this condition, as it allows fuel to enter the combustion chamber when it shouldn't be, leading to a rich air-fuel mixture. In response, the ECU compensates by reducing fuel to maintain the appropriate air-fuel ratio, which explains the negative fuel trim readings. This consistent adjustment reflects the engine's ongoing need to counteract the effects of the leakage, ultimately contributing to poor fuel economy. Other options such as a bad spark plug, a worn air filter, or a faulty ECU could cause performance issues or changes in fuel economy as well, but they would not specifically result in the same characteristic fuel trim readings observed here. A bad spark plug could lead to misfires or incomplete combustion, potentially affecting fuel efficiency but wouldn't directly create the fuel trim scenario described. Similarly, a worn air filter might restrict airflow and affect performance, but would not

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://smogrepairtech.examzify.com>

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