

**Automotive Technology 7<sup>th</sup> Edition**  
**Chapter 79: Vehicle Emissions Standards and Testing**  
**Matching Quiz**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Matching: Choose the item in column 2 that best matches each item in column 1.**

- |   |   |           |
|---|---|-----------|
| 1. Stoichiometric Ratio                 | A. Oxygen because high levels of this gas in the exhaust indicate a lean air-fuel mixture.  | 1. _____  |
| 2. Oxides of Nitrogen                   | B. A California standard for vehicles that have no tailpipe emissions, such as electric and hydrogen-fueled vehicles.   | 2. _____  |
| 3. Lean Misfire                         | C. Harmful exhaust gases formed when nitrogen and oxygen combine under the high temperatures and pressures inside the combustion chamber.                             | 3. _____  |
| 4. Rich Indicator                       | D. A type of on-road testing where equipment projects an infrared light through a vehicle's exhaust stream to analyze its pollutant levels.                           | 4. _____  |
| 5. Lean Indicator                       | E. A condition caused by a lean air-fuel mixture that can cause an engine to misfire, resulting in high HC emissions.   | 5. _____  |
| 6. Catalytic Converter                  | F. The ideal air-to-fuel ratio, 14.7:1 for gasoline, where all fuel is consumed using all available oxygen.   | 6. _____  |
| 7. ZEV (Zero-Emission Vehicle)          | G. Carbon Monoxide (CO), because high levels of this gas indicate a rich air-fuel mixture.  | 7. _____  |
| 8. PZEV (Partial Zero-Emission Vehicle) | H. A standard for vehicles that meet SULEV standards and also have near-zero evaporative emissions and a 15-year/150,000-mile warranty on emission control equipment. | 8. _____  |
| 9. OBD-II Testing Failure               | I. A device that helps reduce exhaust emissions by oxidizing HC and CO and separating NO <sub>x</sub>   | 9. _____  |
| 10. Remote Sensing                      | J. A vehicle test result caused by conditions such as the MIL being commanded on, the MIL not working, or readiness monitors not having been run.                     | 10. _____ |

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**Answer Key**

**Answer Key:**

1. F
2. C
3. E
4. G
5. A
6. I
7. B
8. H
9. J
10. D