Automotive Technology 7th Edition
Chapter 79: Vehicle Emissions Standards and Testing
Short Answer Quiz

Name: _____ Date: _____

1. What does a high level of carbon dioxide (CO2) in the exhaust indicate about engine efficiency and what are the acceptable levels?

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2. Describe the relationship between oxygen (O2) levels in the exhaust and the air-fuel mixture of the engine.

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3. Explain how oxides of nitrogen (NOX) contribute to the formation of photochemical smog and the environmental conditions that exacerbate this process.

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4. What is the significance of the stoichiometric ratio in combustion and how does it relate to emission levels?

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5. How does the addition of 10% alcohol to gasoline affect the levels of carbon monoxide (CO) and oxygen (O2) in the exhaust?

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6. Discuss the role of the EGR system in limiting NOX formation and the potential consequences of a clogged EGR passage.

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7. What are the implications of high hydrocarbon (HC) and carbon monoxide (CO) levels in the exhaust, and what could cause these conditions?

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8. How is water formed during the combustion process in an engine?

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9. What does a low level of CO2 in the exhaust typically indicate about the air-fuel mixture, and why is CO2 level alone not sufficient to determine if the mixture is too rich or too lean?

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10. Identify and explain the various emission ratings from TLEV to ZEV, and the significance of these ratings for vehicle manufacturers and environmental standards.

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