Automotive Technology 7th Edition
Chapter 82
Multiple Choice Quiz A

Name: _____ Date: _____

1. What is the primary function of rhodium in a three-way catalytic converter?
A. To oxidize carbon monoxide to carbon dioxide
B. To reduce nitrogen oxides to nitrogen and oxygen
C. To store oxygen for lean exhaust conditions
D. To convert hydrocarbons to water

2. Cerium is used in catalytic converters for what purpose?
A. To act as a primary catalyst
B. To store oxygen for oxidation processes
C. To reduce back pressure in the exhaust system
D. To increase the surface area of the catalyst

3. What is the typical operating temperature range for a catalytic converter to start functioning effectively?
A. 300°F to 500°F
B. 500°F to 800°F
C. 800°F to 1,200°F
D. 1,200°F to 1,600°F

4. In a catalytic converter, the washcoat is used to:
A. Increase the surface area for the catalyst
B. Protect the substrate from high temperatures
C. Reduce the emission of nitrogen oxides
D. Act as a secondary catalyst

5. What is the main reason for mounting a catalytic converter close to the exhaust ports of the engine?
A. To ensure rapid heating up of the converter
B. To minimize exhaust pipe corrosion
C. To reduce back pressure in the exhaust system
D. To enhance the mixing of exhaust gases

6. Which of the following is a sign of a restricted catalytic converter?
A. Increased fuel efficiency
B. Decreased engine vacuum at higher RPMs
C. Louder exhaust noise
D. Cooler exhaust temperatures

7. What is the role of platinum in a catalytic converter?
A. To oxidize nitrogen oxides
B. To store oxygen for lean conditions
C. To oxidize hydrocarbons and carbon monoxide
D. To reduce the formation of sulfur dioxide

8. A properly functioning catalytic converter should convert NOx emissions into:
A. Carbon dioxide and water
B. Nitrogen and oxygen
C. Hydrocarbons and carbon monoxide
D. Sulfur dioxide and nitrogen

9. What is the effect of a rich exhaust mixture on the reduction bed of a catalytic converter?
A. It enhances the reduction of nitrogen oxides
B. It leads to the formation of more carbon dioxide
C. It increases the oxidation of hydrocarbons
D. It decreases the overall efficiency of the converter

10. The substrate in a catalytic converter is typically made of:
A. Stainless steel
B. Aluminum oxide
C. Ceramic material
D. Carbon fiber

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Answer Key

1. B

2. B

3. C

4. A

5. A

6. B

7. C

8. B

9. A

10. C