

Automotive Electrical and Engine Performance 9th Edition
Chapter 27 – Gasoline, Diesel, and Alternative Fuels
Multiple Choice Questions Quiz A

1. Which process uses high temperatures to break down large hydrocarbons into smaller, more useful molecules for fuel?

- a) Alkylation
- b) Cracking
- c) Desulfurization
- d) Reforming

2. Which grade of gasoline is recommended for high-altitude areas due to the decreased air density?

- a) Regular grade (87 AKI)
- b) Midgrade (89 AKI)
- c) High-altitude grade (85 AKI)
- d) Premium grade (91 AKI)

3. The stoichiometric air-fuel ratio for gasoline, where all fuel is completely burned, is approximately:

- a) 8:1
- b) 12.5:1
- c) 14.7:1
- d) 18.5:1

4. Technician A states that ethanol in gasoline increases octane rating. Technician B states that ethanol reduces volatility. Who is correct?

- a) Technician A only
- b) Technician B only
- c) Both Technicians A and B
- d) Neither Technician A nor B

5. What does the Reid Vapor Pressure (RVP) measure in gasoline?
- a) The freezing point
 - b) The ability to withstand high temperatures
 - c) The pressure of vapor above fuel at 100°F
 - d) The octane rating
6. In the context of gasoline additives, what is the purpose of adding a dye?
- a) To increase the octane level
 - b) To assist in identifying fuel grades or tax exemptions
 - c) To improve engine performance
 - d) To reduce emissions
7. Which of the following best describes the purpose of a fuel with a high cetane number in diesel engines?
- a) Reduces engine wear
 - b) Increases ignition delay for smoother operation
 - c) Decreases ignition delay for easier starting
 - d) Enhances fuel economy
8. A fuel designated as B20 in a diesel engine means:
- a) 20% diesel, 80% biodiesel
 - b) 20% biodiesel, 80% petroleum diesel
 - c) Pure biodiesel only
 - d) Only for off-road diesel engines
9. What happens when a fuel blend with high volatility is used in warm weather?
- a) Better fuel economy
 - b) Improved engine performance
 - c) Increased risk of vapor lock
 - d) Lower emissions

10. Which color is typically used to mark off-road, tax-exempt diesel fuel?

a) Blue

b) Red

c) Green

d) Yellow

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Answer Key Quiz A

Correct Answers:

1. b
2. c
3. c
4. a
5. c
6. b
7. c
8. b
9. c
10. b