

Automotive Technology 7th Edition
Chapter 94
Multiple Choice Quiz A

Name: _____ Date: _____

1. What percentage of the total braking force is provided by the front brakes in FWD vehicles due to weight transfer?
 - A. 20% to 40%
 - B. 60% to 80%
 - C. 50% to 70%
 - D. 30% to 50%

2. What is the phenomenon called when brake system components overheat and lose effectiveness?
 - A. Brake boost
 - B. Brake fade
 - C. Brake drag
 - D. Brake modulation

3. The coefficient of friction is represented by which Greek letter?
 - A. Alpha (α)
 - B. Beta (β)
 - C. Mu (μ)
 - D. Sigma (σ)

4. What is the purpose of reducing copper in brake friction materials?
 - A. To increase braking efficiency
 - B. To reduce environmental impact
 - C. To improve heat dissipation
 - D. To decrease manufacturing costs

5. What is the highest temperature that disc brake pads can reach?
 - A. 300°F (150°C)
 - B. 1,000°F (540°C)
 - C. 1,300°F (700°C)
 - D. 1,800°F (980°C)

6. Which material is commonly used in the brakes of jet aircraft and racing cars?
 - A. Ceramic
 - B. Aramid fiber
 - C. Non-asbestos organic (NAO)
 - D. Carbon fiber

7. What is kinetic energy?
 - A. The energy stored within an object at rest
 - B. The energy of mass in motion
 - C. The potential energy due to an object's position
 - D. The thermal energy produced by friction

8. How does kinetic energy change with the velocity of a vehicle?

- A. It increases linearly with velocity
- B. It decreases as the square of velocity
- C. It increases as the square of velocity
- D. It is independent of velocity

9. What is the difference between static and kinetic friction?

- A. Static friction is independent of the surfaces in contact, while kinetic friction is not
- B. Static friction is always lower than kinetic friction
- C. Static friction is the friction when surfaces are at rest, kinetic friction is when they are sliding
- D. There is no significant difference; they are interchangeable terms

10. What explains the effectiveness of parking brakes compared to service brakes?

- A. The static friction coefficient being higher than kinetic friction
- B. Higher mechanical advantage
- C. Use of different friction materials
- D. They are designed to work only when the vehicle is stationary

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Answer Key

1. B

2. B

3. C

4. B

5. D

6. D

7. B

8. C

9. C

10. A