

Manual Drivetrains and Axles 9th Edition

Chapter 12

Multiple Choice Quiz B

Name: _____ Date: _____

1. How does a viscous coupling differential function?

- A. Through fluid dynamics
- B. Using electrical sensors
- C. Through spring-loaded clutches
- D. By gear meshing

2. What is a typical symptom of a failing differential?

- A. Increased acceleration
- B. Unusual noise during turns
- C. Reduced fuel efficiency
- D. Improved steering control

3. What is the impact of torque bias ratio in a limited slip differential?

- A. It determines gear size
- B. It controls torque distribution
- C. It adjusts wheel alignment
- D. It modifies fuel injection

4. Which type of differential is commonly used in high-performance vehicles for better traction?

- A. Open differential
- B. Locked differential
- C. Torsen differential
- D. Floating differential

5. What is the significance of backlash in ring and pinion gear setup?

- A. It ensures gear lubrication
- B. It controls gear temperature
- C. It provides gear clearance
- D. It increases gear life

6. How does a self-applying clutch differential operate?

- A. By using hydraulic pressure
- B. Through mechanical linkages
- C. By electromagnetic force
- D. Through differential gear forces

7. What is the function of side bearings in a differential?

- A. To support the axle shafts
- B. To hold the differential case
- C. To reduce gear vibration
- D. To align the drive pinion

8. In a drive axle, what is the purpose of the pinion shaft?
- A. To support the pinion gear
 - B. To provide gear lubrication
 - C. To transmit engine torque
 - D. To balance the axle assembly
9. How does an open differential split torque between the drive wheels?
- A. Unequally based on traction
 - B. Equally, regardless of traction
 - C. Based on wheel speed
 - D. According to driver input
10. What is a common design feature of a removable carrier in drive axles?
- A. It is welded to the axle tubes
 - B. It has an external lubrication system
 - C. It can be unbolted from the housing
 - D. It uses a single-piece construction

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Answer Key

1. A

2. B

3. B

4. C

5. C

6. D

7. B

8. A

9. B

10. C