

Name: _____

Date: _____

1. What is the primary force that regenerative braking systems convert into electrical energy?
 - A. Gravitational force
 - B. Kinetic energy
 - C. Potential energy
 - D. Thermal energy

2. When discussing the limitations of regenerative brakes, which of the following is true?
 - A. They act on all wheels equally.
 - B. They replace the need for an antilock braking system (ABS).
 - C. They only act on the driven wheels.
 - D. They can fully recharge the high-voltage battery during a single braking event.

3. What is the relationship between vehicle speed and kinetic energy?
 - A. Kinetic energy decreases linearly with speed.
 - B. Kinetic energy remains constant regardless of speed.
 - C. Kinetic energy increases with the square of the speed.
 - D. Kinetic energy increases linearly with speed.

4. In the context of regenerative braking, what does inertia refer to?
 - A. The energy required to stop a vehicle.
 - B. The resistance of an object to change its state of motion.
 - C. The force applied by the brakes to stop a vehicle.
 - D. The tendency of the vehicle to accelerate without external force.

5. What is the difference between mass and weight in the context of vehicle dynamics?
 - A. Mass is the force of gravity on an object; weight is the amount of matter.
 - B. Mass and weight are interchangeable terms in vehicle dynamics.
 - C. Mass is the amount of matter in an object; weight is the force of gravity on it.
 - D. Weight is the resistance to motion; mass is the energy of motion.

6. What happens to the regenerative braking system when the high-voltage batteries are fully charged?
 - A. The system shuts down completely.
 - B. The system increases the regenerative force.
 - C. The system diverts energy to auxiliary systems.
 - D. The system reduces or stops regenerating electricity.

7. What is meant by "one-pedal driving" in electric vehicles?
 - A. The accelerator pedal is used to accelerate and decelerate the vehicle.
 - B. The vehicle is not equipped with a separate brake pedal.
 - C. The vehicle uses regenerative braking only and not friction brakes.
 - D. The vehicle does not use regenerative braking at all.

8. Which type of regenerative braking system uses an electrohydraulic system?

- A. Series
- B. Parallel
- C. Both series and parallel
- D. Neither series nor parallel

9. During braking on a hybrid electric vehicle equipped with a regenerative braking system, what occurs when the driver depresses the brake pedal?

- A. The friction brakes are only used as a backup and not used during normal braking.
- B. The motors become generators.
- C. The driver needs to apply a braking lever instead of depressing the brake pedal to energize the regenerative braking system.
- D. The batteries are charged to 100% SOC.

10. What is the effect of regenerative braking on the vehicle's battery and fuel consumption?

- A. It increases fuel consumption.
- B. It has no effect on the battery charge or fuel consumption.
- C. It reduces the drawdown of the battery charge and reduces fuel consumption.
- D. It only extends the overall life of the battery pack without affecting fuel consumption.

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Chapter 91

Multiple Choice Quiz A

Answer Key

1. B

2. C

3. C

4. B

5. C

6. D

7. A

8. B

9. B

10. C