Hybrid Electric Vehicles
Chapter 33

ACROSS
1. The __________ __________ __________ used in a hybrid vehicle can be either gasoline or diesel, although only gasoline-powered engines are currently used in hybrid vehicles.
3. Early __________ __________ used lead-acid batteries, an electric motor, and a mechanical controller.
5. The __________ __________ enables the vehicle to use a smaller, more fuel-efficient engine without giving up vehicle performance.
8. A __________ __________ uses both an internal combustion engine and an electric motor to propel the vehicle.
9. The __________ __________ turns off the engine when the vehicle is stopped.
11. Another name for a full hybrid is a __________ __________.
12. When decelerating, the braking system captures the energy from the vehicle’s inertia and converts it to electrical energy, which is stored in the battery or other device for later use; this is called __________ __________.
13. A __________ __________ will incorporate idle stop and regenerative braking but is not capable of using the electric motor to propel the vehicle on its own without help from the internal combustion engine.
14. Different vehicle manufacturers use various __________ __________ technologies.
15. A __________ __________ uses idle stop regenerative braking, and is able to propel the vehicle using the electric motor alone.

DOWN
2. Early electric vehicles were also called __________ __________.
4. The vehicle is shut off when the __________ __________ indicator is off.
6. The presence of __________ __________ cables under the hood would identify the vehicle as an HEV.
7. A __________ __________ uses 144- to 158-volt batteries that provide for engine stop/start, regenerative braking, and power assist.
10. When the electric motor propels the vehicle at lower speeds, this mode is often called __________ __________.