

Answers to selected questions

Chapter 11

- Q6.** The electric motor is used in city-driving conditions, especially when starting from a complete stop or accelerating at low speeds. This way a large gasoline engine is not needed, and the car produces fewer exhaust emissions.
- Q12** No. That would violate the Second Law of Thermodynamics by allowing complete conversion of heat energy input into work.
- Q18** Yes. Work is done to remove heat from the cool environment reservoir and deposit it in the high temperature reservoir.
- Q24** This diagram is correct. More heat is transferred to the hot reservoir than is taken in from the cold one, with work being done.
- Q30** High-grade heat (500 C and higher) has a higher potential for work production than does low-grade heat (100 C and below).
- Q36.** Assuming there are no losses due to friction, all of the kinetic energy will be converted to potential energy by the time the water reaches the original level, and it will thus have no kinetic energy left, and will not be able to rise above the level to operate the water turbine.