Solutions to Period 16 Exercises

E.1 Most electric motors utilize for their operation
   a) one magnet.
   b) no magnets.
   c) two or more magnets.
   d) conversion of resistive heat into kinetic energy.
   e) conversion of gravitational potential energy into kinetic energy

E.1 = c

E.2 The rotor of an electric motor turns because
   a) gravity exerts a greater force on one side than on the other.
   b) there is a repulsive force between like charges on the rotor field coils.
   c) there is a force between the magnetic field of the rotor and the field coils.
   d) energy is conserved in an electric motor.
   e) None of the answers is correct.

E.2 = c
E.3 A DC motor will operate with
   a) one permanent magnet.
   b) two permanent magnets.
   c) four permanent magnets.
   d) all of the above configurations of magnets.

E.3 = d

E.4 A commutator
   a) changes the current in the rotor coils of a DC motor.
   b) is used in some AC motors to provide varying rotational speeds.
   c) transfers the magnetic field between the permanent magnets and the electric coils.
   d) all of the above actions can be done using a commutator.
   e) a) and b) are true.

E.4 = e
E.5 To operate, a motor must

a) have at least one changing magnetic field.

b) have at least two changing magnetic fields.

c) have one fixed magnetic field and one changing magnetic field.

d) have none of the above.

E.5 = a
Solutions to Period 16 Exercises

E.1 = c
E.2 = c
E.3 = d
E.4 = e
E.5 = a