Multiple Choice

1) Of the following units, the one that is a unit of energy is
   a. Newton
   b. Joule
   c. Meter
   d. Liter

2) A stationary object may have
   a. potential energy
   b. velocity
   c. kinetic energy
   d. acceleration

3) Which is the best example that something has kinetic energy?
   a. a car parked on a steep hill
   b. a tennis ball rolling across the court
   c. a picture hanging on the wall
   d. a piece of coal before it's burned

4) Conservation of energy means that
   a. energy can be created but not destroyed
   b. energy can be destroyed but not created
   c. energy can both be created and destroyed
   d. energy can neither be created nor destroyed

5) When coal is burned to produce electricity, the electrical energy produced is less than the potential energy of the coal. Which best explains this observation?
   a. as the coal is heated, the molecules move so fast that they are destroyed
   b. some of the energy in the coal is destroyed by the intense heat required to release its potential energy
   c. some of the potential energy in the coal is converted into forms of energy other than electricity
   d. the amount of energy in the coal is not known
6) In the figure, kinetic energy is being converted into potential energy from
   a. point A to point B
   b. point B to point C
   c. The only energy involved here is kinetic energy
   d. Energy is not being converted

7) In the figure, potential energy is being converted into kinetic energy from
   a. point A to point B
   b. point B to Point C
   c. The only energy involved here is potential energy
   d. Energy is not being converted

8) As the car moves from point A , to point B, and finally to point C, the total energy of
   the car
   a. decreases from point A to point B, then increases from point B to point C
   b. increases from point A to point B, then decreases from point B to point C
   c. stays the same, but is converted between potential and kinetic energy
   d. is lost between points B and C
9) A tennis ball was hit and was traveling at a constant speed. The graph above shows the distance the tennis ball traveled from its starting point in 5 seconds. What was the tennis ball's speed?

a) 0.5 m/s  
b) 1 m/s  
c) 1.5 m/s  
d) 2 m/s

Open Response

9) Describe the energy transformations that occur during a pole vault jump (At least 6-7 sentences).