

Multiple Choice

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

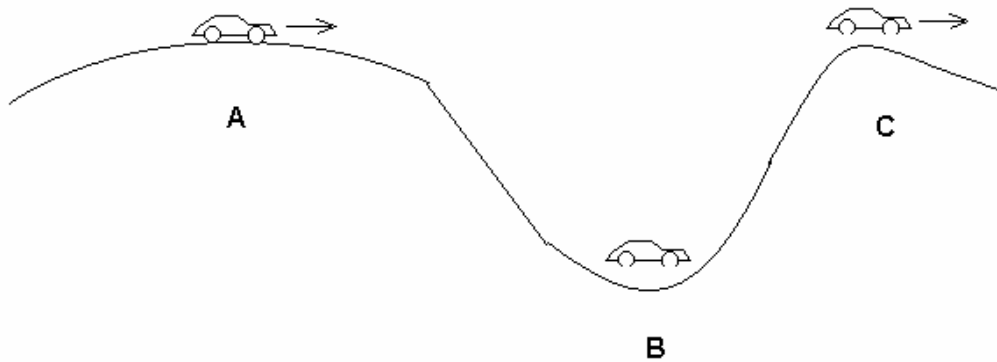
- 2) A stationary object may have
 - a. potential energy
 - b. velocity
 - c. kinetic energy
 - d. acceleration

- 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

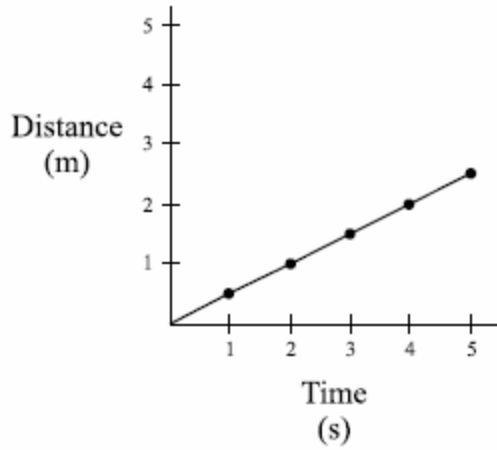
- 5) When coal is burned to produce electricity, the electrical energy produced is less than the potential energy of the coal. Which best explains this observation?
 - a. as the coal is heated, the molecules move so fast that they are destroyed
 - b. some of the energy in the coal is destroyed by the 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

Figure 1 (Use this figure to answer questions 6,7, and 8. Assume that the height at point A and point C are the same)



- 6) In the figure, kinetic energy is being converted into potential energy from
- point A to point B
 - point B to point C
 - The only energy involved here is kinetic energy
 - Energy is not being converted
- 7) In the figure, potential energy is being converted into kinetic energy from
- point A to point B
 - point B to Point C
 - The only energy involved here is potential energy
 - 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
- decreases from point A to point B, then increases from point B to point C
 - increases from point A to point B, then decreases from point B to point C
 - stays the same, but is converted between potential and kinetic energy
 - is lost between points B and C

Distance-Time Graph for an Object Moving at Constant Speed



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).