## *Checkout Questions*

# Lab 22. Conservation of Energy and Wind Turbines: How Can We Maximize the Amount of Electrical Energy That Will Be Generated by a Wind Turbine Based on the Design of Its Blades?

1. The electrical energy produced by a wind turbine originates as solar energy. Describe the processes that transfer solar energy from the Sun into electrical energy in the wires produced by the turbine.

2. Using concepts of (1) conservation of momentum, (2) conservation of energy, (3) the definition of momentum as a vector quantity, and (4) the definition of energy as a scalar quantity, explain why there is a maximum value for the energy output for one of the variables you tested.

3. People view some research as being more important than other research because of current events or what is important in society.

   a. I agree with this statement.
   b. I disagree with this statement.

   Explain your answer, using an example from your investigation about wind turbines.

4. Scientific knowledge, once it has been proven true, does not change.

   a. I agree with this statement.
   b. I disagree with this statement.

   Explain your answer, using an example from your investigation about wind turbines.

5. How something is structured can affect that object's function.

   a. I agree with this statement.
   b. I disagree with this statement.

   Explain your answer, using an example from your investigation about wind turbines.

6. Scientists often need to track how matter moves into and within a system. Explain why this is important, using an example from your investigation about wind turbines.

7. Scientists often need to define a system under study and then create a model during an investigation. Explain why models of systems are useful in science, using an example from your investigation about wind turbines.