Name _____ Date _____ Class _____

CHAPTER 16 STUDY GUIDE FOR CONTENT MASTERY

Energy and Chemical Change

Section 16.1 Energy

In your textbook, read about the nature of energy.

In the space at the left, write *true* if the statement is true; if the statement is false, change the italicized word or phrase to make it true.

_____ **1.** *Energy* is the ability to do work or produce heat.

_____ **2.** The law of conservation of energy states that energy *can be* created and destroyed.

_____ **3.** Chemical potential energy is energy stored in a substance because of its *composition*.

_____ **4.** *Heat* is a form of energy that flows from a warmer object to a cooler object.

_____ **5.** A calorie is the amount of energy required to raise the temperature of *one gram* of pure water by one degree Celsius.

_____ **6.** A *calorie* is the SI unit of heat and energy.

_____ **7.** The *specific heat* of a substance is the amount of heat required to raise the temperature of one gram of that substance by one degree Celsius.

_____ **8.** *Kinetic energy* is energy of motion.

_____ **9.** Chemicals participating in a chemical reaction contain *only potential energy*.

_____ **10.** One nutritional Calorie is equal to *100 calories*.

_____ **11.** One calorie equals *4.184 joules*.

_____ **12.** When a fuel is burned, some of its *chemical potential energy* is lost as heat.

_____ **13.** To convert kilojoules to joules, *divide* the number of kilojoules by 1000 joules/1 kilojoule.

Answer the following question. Show all your work.

14. If the temperature of a 500.0-g sample of liquid water is raised 2.00°C, how much heat is absorbed by the water? The specific heat of liquid water is 4.184 J/(g•°C).