Name _____ Date _____ Period _____

Unit 11 Thermochemistry Vocabulary **C405 Chemistry**

Part I Matching: Write the letter of the description that best matches each term.

1. _____ Calorie
2. _____ exothermic process
3. _____ heat capacity
4. _____ system
5. _____ universe

A. system + surroundings

B. the amount of heat required to change the temperature of an object by exactly 1 °C

C. 1000 calories

D. the part of the universe being studied

E. a process that loses heat to the surroundings

Part II Fill in the Blank

The energy that flows from a warm object to a cool object is called _6_. The energy stored within the structural units of chemical substances is called chemical _7_. The study of heat changes during chemical reactions and changes of state is called _8_. Heat energy can be measured in _9_. This unit is defined as the amount of heat needed to raise 1 g of water 1 °C. The SI unit of heat and energy is the _10_ , which is equal to 0.2390 cal. The _11_ of a substance is the amount of heat divided by the mass times change in temperature. Substances like _12_ , with low heat capacities, take a shorter time to heat up than substances with high heat capacities, such as _13_.

6._____

7._____

8._____

9. _____

10._____

11._____

12._____

13._____

Part III - Are the following statements always true (AT), sometimes true (ST), or never true (NT)?

_____ 14. The joule is the SI unit of force.

_____ 15. Endothermic processes absorb heat from the surroundings.

_____ 16. The law of conservation of energy states that in a chemical process, energy is sometimes created and sometimes destroyed.

_____ 17. A system that loses heat to its surrounding is said to be exothermic and the value of q is negative.

_____ 18. A calorie is defined as the quantity of heat needed to raise the temperature of 1 gram of pure water 1 °C.

Part IV Questions and Problems

19. Define these terms: chemical potential energy, work, and heat. What is the difference between them?

20. The temperature of a piece of unknown metal with a mass of 18.0 g increases from 25°C to 40°C when the metal absorbs 124.2 J of heat. What is the specific heat of the unknown metal?