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| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Date: \_\_\_\_\_\_\_\_\_ | Period: \_\_\_\_\_\_\_ |

Thermodynamics

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|  |  | 1  L |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2  T |  | 3  C |  |
|  |  | A |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4  S | P | E | C | I | F | I | C | H | E | A | T |
|  |  | W |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | E |  | L |  |
| 5  E | X | O | T | H | E | R | M | I | C |  |  |  |  |  |  |  |  |  | 6  A |  |  |  |  |  |  | R |  | O |  |
|  |  | F |  |  |  |  |  |  |  | 7  C |  |  |  |  |  |  |  |  | B |  |  |  |  |  |  | M |  | R |  |
|  |  | C |  |  | 8  E |  | 9  C |  |  | A |  |  |  |  |  |  |  |  | S |  | 10  F |  |  |  |  | O |  | I |  |
|  |  | O |  |  | N |  | O |  |  | L |  |  |  |  | 11  R |  |  |  | O |  | R |  |  |  |  | D |  | M |  |
|  |  | N |  |  | D |  | N |  |  | O |  |  | 12  H | E | A | T |  |  | L |  | 13  E | N | E | R | G | Y |  | E |  |
|  |  | S |  |  | O |  | D |  |  | R |  |  |  |  | D |  | 14  J |  | U |  | E |  |  |  |  | N |  | T |  |
|  |  | E |  |  | T |  | U |  |  | I |  |  |  |  | I |  | O |  | T |  | Z |  |  |  |  | A |  | E |  |
|  |  | R |  |  | H |  | C |  | 15  T | E | M | P | E | R | A | T | U | R | E |  | I |  |  | 16  B |  | M |  | R |  |
|  |  | V |  |  | E |  | T |  |  |  |  |  |  |  | T |  | L |  | Z |  | N |  |  | O |  | I |  |  |  |
|  |  | A |  |  | R |  | I |  |  | 17  K | I | N | E | T | I | C | E | N | E | R | G | Y |  | I |  | C |  |  |  |
|  |  | T |  |  | M |  | O |  |  |  |  |  |  |  | O |  | S |  | R |  | P |  |  | L |  | S |  |  |  |
| 18  F | R | I | C | T | I | O | N | A | L | H | E | A | T | I | N | G |  |  | O |  | O |  |  | I |  |  |  |  |  |
|  |  | O |  |  | C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | I |  |  | N |  |  |  |  |  |
|  |  | N |  |  |  |  |  |  |  |  | 19  P | O | T | E | N | T | I | A | L | E | N | E | R | G | Y |  |  |  |  |
|  |  | O |  |  |  |  |  |  |  | 20  C |  |  |  |  |  |  |  |  |  |  | T |  |  | P |  |  |  |  |  |
|  |  | F |  |  |  |  | 21  I | N | T | E | R | N | A | L | E | N | E | R | G | Y |  |  |  | O |  |  |  |  |  |
|  |  | E |  |  |  |  |  |  |  | L |  |  |  |  |  |  |  |  |  |  |  |  |  | I |  |  |  |  |  |
|  | 22  E | N | T | H | A | L | P | Y |  | S |  |  |  |  | 23  C | O | N | V | E | C | T | I | O | N |  |  |  |  |  |
|  |  | E |  |  |  |  |  |  |  | I |  |  |  |  |  |  |  |  |  |  |  |  |  | T |  |  |  |  |  |
|  |  | R |  |  |  |  |  |  |  | U |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Across**  **4.** the quantity of energy needed to raise the temperature of 1 kg of a substance by 1℃ at constant pressure  **5.** energy flows out of a system  **12.** a flow of energy due to a temperature difference  **13.** the ability to do work or produce heat  **15.** a measure of the random motions of the components of a substance  **17.** energy due to the motion of the object  **18.** kinetic energy transferred to a surface as heat  **19.** energy due to position or composition  **21.** sum of the kinetic and potential energies of all "particles" in the system  **22.** to measure how much energy is produced or absorbed by a given reaction  **23.** heat that is transferred by movement of a fluid | **Down**  **1.** energy can be converted from one form to another but can be neither created nor destroyed  **2.** the study of heat energy  **3.** used to determine the heat associated with a chemical reaction  **6.** the lowest possible temperature on the Kelvin scale where all molecules would stop  **7.** amount of energy (heat) required to raise the temperature of one gram of water by one degree Celsius  **8.** energy flows into a system  **9.** heat transferred method between objects in contact as a result of temperature difference  **10.** 1 atm pressure, water freezes at 0 degrees Celsius  **11.** a transfer of heat energy through space by means of electromagnetic waves  **14.** 4.184 \_\_\_\_\_\_\_\_\_\_ = 1 calorie  **16.** 1 atm pressure, liquid water always changes to gaseous water at 100 degrees Celsius  **20.** a unit of measurement that was once called Centigrade because there are 100 degrees between the freezing and boiling points of water in this scale |