TEST 1 STUDY GUIDE

Topic	*Text Reference*
CHAPTER 1	
• Know the steps in scientific method	1.2
• Differentiate between observation, hypothesis, conclusion and natural law	1.2
• Use knowledge of percentages to solve simple problems	1.4
• Rearrange equations to solve for any variable in the equation	1.4
• Convert from decimal notation to scientific notation and vice versa	1.5
• Perform mathematical operations with scientific notation	1.5
CHAPTER 2	
• Know the SI units of measurement for mass, length, and volume	2.1
• Determine the number of significant digits in a measurement	2.2
• Round numbers to a specified number of significant digit	2.2
• Determine the number of significant digits in a calculated answer	2.3
• Perform metric conversions involving the SI prefixes (M, k, c, m, μ)	2.3
• Write conversion factors for various metric to metric equalities	2.4-2.5
• Perform English to metric conversions with given conversion factors	2.6
• Use conversion factors to solve problems involving units such as medicine dosage and IV flow rates	2.6
• Calculate density and use to determine mass and volume	2.7
CHAPTER 3	
• Know the definition and the two types of energy	3.4
• Convert temperatures between F, °C, and K	3.3
• Understand the conceptual difference between temperature and heat	Notes
• Know what specific heat is and how it affect behavior of matter	3.6
• Calculate heat based on mass, specific heat and temperature	3.6
• Calculate the energy value of foods	3.5
• Classify matter as element, compound or mixture	3.1
• Know the definition and characteristics of elements, compounds and mixtures	3.1
• Differentiate between a homogeneous and heterogeneous mixture	3.1
• Differentiate between compounds and mixtures	Notes
• Know the definition and characteristics of the 3 states of matter	3.2
• Differentiate between physical and chemical properties of matter	3.2
• Differentiate between physical and chemical changes	3.2
• Know the various changes of states and the energies associated with each	3.7
• Calculate the energy of the phase changes using heats of fusion and vaporization	3.7
• Identify the various steps in the heating curve of a substance	3.7
• Calculate the energy of multi-step heating or cooling curves	3.7

SUMMARY OF EQUATIONS

The information listed below will be provided for your use on the test.

$$Q = m \text{ x } s \text{ x } \Delta T$$

1 cal = 4.184 J $\qquad$ 1Cal = 1000 cal

H_f for ice = 80 cal/g $\qquad$ H_v for water = 540 cal/g