

Section **2.2**  
Review**Heat and Temperature**

**DIRECTIONS:** Write on the line at the right of each statement the number that makes the statement an equality when substituted for the corresponding number.

1.  $30^{\circ}\text{C} = \underline{(1)} \text{ K}$  \_\_\_\_\_ 1
2.  $-25^{\circ}\text{C} = \underline{(2)} \text{ K}$  \_\_\_\_\_ 2
3.  $190\text{K} = \underline{(3)} ^{\circ}\text{C}$  \_\_\_\_\_ 3
4.  $300\text{K} = \underline{(4)} ^{\circ}\text{C}$  \_\_\_\_\_ 4
5.  $6500 \text{ cal} = \underline{(5)} \text{ kJ}$  \_\_\_\_\_ 5
6.  $1.62 \text{ kJ} = \underline{(6)} \text{ kcal}$  \_\_\_\_\_ 6

**DIRECTIONS:** Write on the line at the right of each statement the letter preceding the word or expression that best completes the statement.

7. Determining whether an object feels hot or cold to the touch is a way of measuring its  
(a) temperature; (b) heat; (c) density; (d) none of the above. \_\_\_\_\_ 7
8. The measurement using a thermometer is based on the (a) type of thermometer liquid;  
(b) quantity of thermometer liquid; (c) uniform expansion or contraction of the thermometer  
liquid; (d) thermometer liquid's color. \_\_\_\_\_ 8
9. Water freezes at (a) 273.15K; (b)  $100^{\circ}\text{C}$ ; (c) 0K; (d) 373.15K. \_\_\_\_\_ 9
10. The equation used to convert from the Celsius to Kelvin scale is (a)  $T(\text{K}) = t(^{\circ}\text{C}) + 100$ ;  
(b)  $T(\text{K}) = t(^{\circ}\text{C}) + 273.15$ ; (c)  $T(\text{C}) = t(\text{K}) + 100$ ; (d)  $T(^{\circ}\text{C}) = t(\text{K}) + 273.15$ . \_\_\_\_\_ 10
11. If two systems do not have heat flowing between them, they have the same (a) density;  
(b) thermodynamic properties; (c) specific heat; (d) temperature. \_\_\_\_\_ 11
12. One calorie is the same amount of heat as 4.184 (a) joules; (b) Calories; (c) kilojoules;  
(d) kilocalories. \_\_\_\_\_ 12

**DIRECTIONS:** Write the answer to questions 13–15 on the line to the right, and show your work in the space provided.

13. A 4.0-g sample of iron was heated from  $0.0^{\circ}\text{C}$  to  $20.^{\circ}\text{C}$ , and was found to have absorbed  
35.2 J of heat. Calculate the specific heat of this piece of iron. \_\_\_\_\_ 13
14. Calculate how much heat a copper sample will gain if its specific heat is  $0.384 \text{ J}/(\text{g}\cdot^{\circ}\text{C})$ , its mass  
is 8.00 g, and it is heated from  $10.0^{\circ}\text{C}$  to  $40.0^{\circ}\text{C}$ . \_\_\_\_\_ 14
15. Determine the specific heat of a material if a 6 g sample absorbs 50 J as it is heated from  
 $30^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ . \_\_\_\_\_ 15