Blitz Ch 10 & 11, Form S

Name _____

Period

This is a Take Home Exam. You may use your notes but you may NOT use help from human beings.

EXPLAIN IN COMPLETE SENTENCES AND GIVE EXAMPLES:

You MUST HAND WRITE THIS EXAM!! NO TYPED PAPERS WILL BE ACCEPTED!

1. Discuss and explain FIVE devices for measuring temperature.

- 2. Draw the warming curve for water, label its parts, and tell what is happening at each of the FIVE positions.
- 3. Describe the TWO Laws of Thermodynamics, and give an example of each.
- 4. Discuss **TEN** of the fifteen shocks of *Vapor Pressure and Boiling Point* and give an example of each.
- 5. Discuss Maxwell's Demon and Boltzman's Statistics.

*** SHOW METHOD OF SOLUTION FOR ALL PROBLEMS (The 1,2,3,4!)

6. A piece of Cu wire is 7.80 m long at 28.0°C. Find its increase in length at 69.2°C. $\alpha = 1.68 \times 10^{-5}$.

7. If 42.5 g of water at 26.2°C is mixed with 68.5 g of water at 39.4°C, find the final temperature.

8. Find the number of joules obtained by burning 22.00 liters of gasoline. Density of gasoline = 0.700 g/cm^3 , and it liberates 1.15 X 10^4 cal/g . 1cal = 4.18 j. 1 L =1000 cm³.

9. Find the total number of calories needed to change 44.0 g of ice at -29.3°C to steam at 452.0°C. Show all FIVE steps. <u>See sample problem</u>.

10. A piece of metal massing 113.0 g at a temperature of 100.0°C is dropped into 59.6 g of water at 21.4°C. The final temperature of the mixture is 28.2°C. Find the specific heat of the metal.

STUFF:

Heat Lost = Heat Gained	sp.ht. ice = $0.530 \text{ cal/g.C}^{\circ}$
$\Delta l = \alpha l \Delta t$	sp.ht. water = $1.00 \text{ cal/g.C}^{\circ}$
$Q = mc\Delta t$	sp.ht. steam = $0.481 \text{ cal/g.C}^{\circ}$
ht.fus. ice = 80.0 cal/g	ht.vap. water = 538 cal/g

When finished, please STAPLE this exam onto your papers and turn in on due date.