

# Blitz Ch 10 & 11, Form I-L

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 *Maxwell's Demon* and *Boltzman's Statistics*.
2. Discuss **Capacity of Air**, **Absolute Humidity**, and **Relative Humidity** and how to make a cloud in a 4-Liter jug using **adiabatic** action.
3. Discuss **TEN** of the fifteen shocks of *Vapor Pressure and Boiling Point* and give an example of each.
4. Explain the **THREE** methods of heat transfer and how a Thermos Bottle reduces these **THREE** methods of heat transfer.
5. Draw the warming curve for water, label its parts, and tell what is happening at each of the **FIVE** positions

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

6. A piece of Cu wire is 9.34 m long at 13.0°C. Find its increase in length at 18.7°C.  $\alpha = 1.68 \times 10^{-5}$ .
7. If 19.5 g of water at 22.1°C is mixed with 76.5 g of water at 64.2°C, find the final temperature.
8. Find the number of joules obtained by burning 6.00 liters of gasoline. Density of gasoline = 0.700 g/cm<sup>3</sup>, and it liberates  $1.15 \times 10^4$  cal/g. 1 cal = 4.18 j. 1 L = 1000 cm<sup>3</sup>.
9. Find the total number of calories needed to change 23.0 g of ice at -34.0°C to steam at 222.0°C. Show all **FIVE** steps. [See sample problem.](#)
10. A piece of metal massing 125.0 g at a temperature of 100.0°C is dropped into 67.0 g of water at 16.0°C. The final temperature of the mixture is 25.0°C. Find the specific heat of the metal.

**STUFF:**

Heat Lost = Heat Gained	sp.ht. ice = 0.530 cal/g.C <sup>o</sup>
$\Delta l = \alpha l \Delta t$	sp.ht. water = 1.00 cal/g.C <sup>o</sup>
$Q = mc\Delta t$	sp.ht. steam = 0.481 cal/g.C <sup>o</sup>
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.**