Blitz, Ch 9, Form I-L

Name _____ Period ____

This is a Take Home Exam. **You may use your Notes, PowerPoint, or Text on this exam but NO help from human beings!**

EXPLAIN IN COMPLETE SENTENCES AND GIVE EXAMPLES:

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

1. Explain what surface tension is, how it is produced, and give two examples of surface tension.

2. State Archimedes' Principle and describe how it is possible for a steel ship to float.

3. Define: element, compound, atom, molecule, atomic mass, and atomic mass number.

4. Explain the meaning of pressure, and give examples of pressure in solids, liquids, and gases.

5. Discuss five evidences supporting the Kinetic Theory.

6. State Pascal's Law and discuss an important application of it.

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

7. Determine the density of a super-secret RBAF device that masses 96.2 g in air and 34.7 g under water.

8. Find the number of kilograms to pull apart Magdeburg Hemispheres whose radii are 18.2 cm. Assume all air is removed and it is at sea level.

9. An aluminum wire 85.2 cm long and 0.29 cm in radius is suspended. A 34.3 kg mass is attached to the end. Find the stress.

10. The classified documents vault has a spring stretched by a force of 0.23 n a distance of 0.012 m. Find how far it will stretch when the force is 0.54 n.

FORMULAS: For a spring: $F = k\Delta d$ ... stress = F/A ... strain = $\Delta l/l$ ... Y = stress/strain ...

$Y_{Au} = 7.85 \times 10^{10}$ n/m^2 ... $Y_{Al} = 6.96 \times 10^{10}$ n/m^2 ... $Y_{Cu} = 11.6 \times 10^{10}$ n/m^2

$P = f/A$ .... $TF = PA$ ... $P_{atm} = 10$ m H_2O ... $P_{atm} = 760$ mm Hg... $P_{atm} = 1$ kg/cm^2

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