

## Blitz, Ch 9, Form D-H

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. Describe the molecular arrangement in solids, liquids, and gases, and explain why these arrangements are altered by heating.
2. Discuss FIVE evidences supporting the Kinetic Theory.
3. State Pascal's Law and describe an application of it.
4. Tell how atmospheric pressure was discovered by Torricelli. (Include the operations of pumps and the barometer.)
5. Define: cohesion, adhesion, tensile strength, ductility, malleability, elasticity, and Hooke's Law.
6. State Bernoulli's Principle and describe five examples of it.

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

7. Calculate the number of kilograms needed to separate evacuated hemispheres of radii 12.0 cm. Assume all air is removed and it is at sea level.
8. A gold wire 85.0 cm long and 0.20 cm in diameter is suspended from a support. A 42.0 kg mass is attached to the end. Find the stress.
9. A secret door spring is stretched 0.03 m by a force of 0.20n. How far will it be stretched by a force of 2.8 n ?
10. Find the density of a piece of evidence that masses 24.3 g in air and 19.8 g under water.

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

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

$$P = f/A \quad \dots \quad TF = PA \quad \dots \quad P_{\text{atm}} = 10 \text{ m H}_2\text{O} \quad \dots \quad P_{\text{atm}} = 760 \text{ mm Hg} \quad \dots \quad P_{\text{atm}} = 1 \text{ kg/cm}^2$$

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