**KMT and Gas Laws Test: General**

R = 0.08206 Latm/molK

1) What are the four postulates of the kinetic molecular theory? (8 pt)

2) Why can we assume that gas molecules are infinitely small? (4 pt)

3) Why aren’t liquids as compressible as gases? (4 pt)

4) If I have 4.5 grams of O2 gas at a pressure of 3.33 atm and a volume of 0.775 L, what is the temperature of this gas? R = 0.08206 Latm/molK. (5 pt)

5) I have 45 liters of a gas at a temperature of 45o C. If I have 4.5 moles of this gas present, how what is the pressure of the gas?(5 pt)

6) A taxidermied squirrel has a volume of 75.0 mL at a temperature of 290o C. If the temperature of the squirrel is increased to 325o C, what will its new volume be? (5 pt)

7) A balloon held underwater has a volume of 1.5 L at a pressure of 1.2 atm. If the balloon is released so that it rises to the surface where the pressure is 1.0 atm, what will the new volume of the balloon be? (5 pt)

8) In problems 6 and 7 above, I never specified what gas was involved. If I were to use two different gases, would I get the same answers to these questions? Why or why not? (5 pt)

9) What happens in the following scenarios? (1 pt each, circle one answer each)

* When you decrease the pressure on a gas, the volume ( increases / decreases ).
* When you increase the volume of a gas, the pressure ( increases / decreases ).
* When you decrease the volume of a gas, the pressure ( increases / decreases ).
* When you decrease the temperature of a gas, the volume ( increases / decreases ).