

Honors Chemistry

CH 14 Test

Gas Laws/Dooner/CHS NAME: \_\_\_\_\_ Per: \_\_\_\_\_

SHOW ALL WORK, including UNITS, in the space beneath the questions. **Box the final answer. Use the correct number of Significant Figures. You can list answers only in a separate list using BIG and BOLD figures(with correct sigfigs and units). If you do that, be sure to attach your full work in your own handwriting. I am including KEY EQUATIONS(handwritten) at end of test.**

**THIS IS CLOSED BOOK AND NO COLLABORATION IS ALLOWED! There are 10 questions.**

1. A sample of carbon dioxide occupies a volume of 3.50 Liters at 145 kPa. What pressure would the gas exert if the volume was decreased to 3.00 Liters?
2. A 155 mL sample of neon had its pressure changed from 85.0 kPa to 175 kPa. What is its new volume?
3. Chlorine gas occupies a volume of 50.0 mL at 300.0 K. What volume will it occupy at 650.0 K?
4. A sample of neon gas at 60.0 C and a volume of 3.50 Liters is cooled to 35.0 C. What is the new volume?
5. A sample of nitrogen gas has a pressure of 6.58 kPa at 739 K. If the volume does not change, what will the pressure be at 311 K?

6. A 5.00 L air sample has a pressure of 107 kPa at a temperature of  $-50.0\text{ }^{\circ}\text{C}$ . If the temperature is raised to  $102.0\text{ }^{\circ}\text{C}$  and the volume expands to 7.00 L, what will the new pressure be?
7. How many moles of oxygen gas will occupy a volume of 2.50 L at 109.5 kPa and a temperature of  $25.0\text{ }^{\circ}\text{C}$ ?
8. What pressure is exerted by 0.350 mol of a gas at  $25.0\text{ }^{\circ}\text{C}$  if the gas is in a 0.750 L container?
9. The pressure in an automobile tire filled with air is 245.0 kPa. The  $P_{\text{O}_2} = 51.3\text{ kPa}$ ;  $P_{\text{CO}_2} = 0.10\text{ kPa}$ ; and  $P_{\text{others}} = 2.3\text{ kPa}$ . What is the  $P_{\text{N}_2}$  ?
10. Which gas effuses faster at the same temperature: molecular oxygen or atomic argon?