**AP CHEMISTRY CHAPTER 10: (Pgs. 398 - 430)**

EQ: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Questions:

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| **SECTION 1-Characteristics of Gases-2**   * Physical properties of gases are all similar. * Composed mainly of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ elements with simple formulas and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Unlike liquids and solids, gases:    * Two or more gases form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mixture. | | **Properties Which Define the State of a Gas Sample-3** |
| **SECTION 2-PRESSURE-4**  Pressure is the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Equation:  -\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the weight of air per unit of \_\_\_\_\_\_\_\_\_\_\_\_\_\_. | | **Units of Pressure-5**  Pascals:  Bar:  mmHg or Torr:  Atmospheres: |
| **Manometer-6**  A manometer is used to: | **Standard Pressure-7**  Standard atmospheric pressure:  It is equal to:  -  -  - | |
| **SECTION 3-Boyle’s Law-8-9**  The volume of a fixed quantity of gas at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ temperature is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proportional to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  PV= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equation:  Sketch the graph: | | |
| **Charles’ Law-10-11**  The volume of a fixed quantity of gas at a constant is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proportional to its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ temperature.  V= \_\_\_\_\_\_\_\_\_\_\_\_ x T  Equation:  Sketch the graph: | **Avogadro’s Law-12**  The volume of a gas at constant \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ proportional to the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of gas.  At STP, 1 mole = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ L.  Equation: | |
| **SECTION 4-Ideal Gas Law-13**  The ideal gas law equation:  R is the: | | **SECTION 5-Density of Gases-14**  What is the ideal gas law with density included?  Equation: |
| **Density and Molar Mass of a Gas-15**   * One needs to know only the ­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the temperature to calculate the density of a gas. * *d* = *MP*/*RT* * Also, if we know the mass, volume, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a gas, we can find its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   Equation: | **Volume and Chemical Reactions-16**  The balanced equation tells us \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amounts of \_\_\_\_\_\_\_\_\_ in a reaction, whether the compared materials are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Ideal gas law:  For example: use (*PV* = *nRT*) for substance *A* to get moles *A*; use the mole ratio from the balanced equation to get moles *B*; and (*PV* = *nRT*) for substance *B* to get volume of *B.* | |
| **SECTION 6-Dalton’s Law of Partial Pressures-17**  If two gases that *\_\_\_\_\_\_\_*react are combined in a container, they act as if they are alone in the container. The total \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a mixture of gases equals the \_\_\_\_\_\_\_\_\_\_ of the pressures that each would exert if it were present alone.  Equation: | | **Mole Fraction-18**  Because each gas in a mixture acts as if it is alone, we can relate amount in a mixture to partial pressures:  That ratio of moles of a substance to total moles is called the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, *χ*.  Equation: |
| **Pressure and Mole Fraction-19**  The end result: | | **SECTION 7-Main Tenets of Kinetic-Molecular Theory-21**  1)  2)  3) |
| **Main Tenets of Kinetic-Molecular Theory-22**  4)  5) | | **How Fast Do Gas Molecules Move?-23**  Temperature is related to their:  Individual molecules can have:  ump:  uav:  urms: |
| **Urms and Molecular Mass-24**  At any given temperature, average kinetic energy of molecules is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  ½ m (urms)2 is the same for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  If a gas has a \_\_\_\_\_\_\_\_\_\_ mass, its speed will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than for a \_\_\_\_\_\_\_\_\_\_\_\_ molecule.  Equation: **Urms =** | | **SECTION 8-Effusion and Diffusion-25**  Effusion:  Diffusion: |
| **Graham’s Law Describes Diffusion and Effusion-26**  Graham’s law relates:  The “\_\_\_\_\_\_\_\_\_\_\_\_\_” gas always has a faster rate of speed.  Equation: | | |

**SUMMARY**

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