**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:
1.
2.
3.
* Two or more gases form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mixture.
 | **Properties Which Define the State of a Gas Sample-3** 1.
2.
3.
4.
 |
| **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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