**QUESTIONS**

**TEXTBOOK**

***Page(s)* ANSWERS**

|  |  |  |
| --- | --- | --- |
| Use the kinetic-molecular theory to explain each of the following properties of gases: expansion, fluidity, low density, compressibility, and diffusion. | 329-332 | Expansion: The molecules are moving in continuous straight lines. So they will continue in one direction until colliding with something, meaning they will fill whatever container they are in.   Fluidity: Fluidity is the ability to flow, or move from one place to another. Since gases are in constant motion, and the molecules are independent of each other, the gas is able to flow.   Low Density: The molecules are much further apart than with a solid or liquid.  Compression ability: Is this even a word? Gases can be compressed because there is so much space between molecules.   Diffusion: Diffusion is movement from an area of high concentration to an area of low concentration. |
| Describe the conditions under which a real gas is most likely to behave ideally. | 330 | The molecules in ideal gas do not have a finite volume and exert no attractive forces. |
| Which of the following gases would you expect to deviate significantly from ideal behavior: He, O2, H2, H2O, N2, HCl, or NH3? | 331 | HCl is the most polar of these, so it won't behave ideally. |
| How does the kinetic-molecular theory explain the pressure exerted by gases? | 331 | The greater the number of molecules, the greater the number of collisions with the walls off the container at a constant temperature, and the greater the pressure of the gas, and vice-versa |

Summary: Expansion is when molecules are moving in continuous straight lines. So they will continue in one direction until colliding with something, meaning they will fill whatever container they are in. Fluidity is the ability to flow, or move from one place to another. Since gases are in constant motion, and the molecules are independent of each other, the gas is able to flow. The molecules are much further apart than with a solid or liquid. Gases can be compressed because there is so much space between molecules.Diffusion is movement from an area of high concentration to an area of low concentration.The molecules in ideal gas do not have a finite volume and exert no attractive forces.The greater the number of molecules, the greater the number of collisions with the walls off the container at a constant temperature, and the greater the pressure of the gas.