Homework 12

November 18, 2022

Weekly homework assignments are posted approximately one week prior to the due date. Collaborations are encouraged and students must report all collaborators in writing on each assignment. All external sources (websites, books) must be properly cited. Additional problems are listed at the end of each assignment. This week's assignment is due *Weds, Nov 23rd at 11:59pm.*

1) Draw the resonance structures and resonance hybrid for the following compounds: N_3^-, SCN^-, O_3, ClO_4^-, N_2O_4. (6 pts)

2) At constant temperature, 400.0 mL of a gas are under a pressure of 800.0 torr. What would the volume of the gas be at a pressure of 1000.0 Torr? Report to 4 sig figs. (1 pt)

3) An ideal gas occupying a 2.0 L flask at 760 Torrs is allowed to expand to a volume of 6.0 L. Calculate the final pressure. Report to 2 sig figs. (1 pt)

4) How hot will a 2.3L balloon have to get to expand to a volume of 400L? Assume that the initial temperature of the balloon is 25.0°C. Report to 2 sig figs. (1 pt)

5) A 12.8L volume of gas contains 0.930 moles of gas. At constant temperature and pressure, what volume of 0.255 moles gas does the gas fill? Report to 3 sig figs. (1 pt)

Optional Textbook Problems: Ch. 9- $9.21 - 9.79$ odd