Question 1: A fixed amount of a gas has both its temperature and volume doubled. What happens to its pressure?

A) It doubles.

B) It is halved.

C) It quadruples.

D) It remains the same.

Question 2: Assuming that the pressure and quantity of a gas sample remain constant, what will be the final volume of a 4.86 L sample of a gas at 281 °C which is cooled to 225 °C?

A) 5.19 L

B) 4.37 L

C) 2.92 L

D) 2.78 L

Question 3: An unknown gaseous substance has a density of 1.06 g/L at 31 °C and 371 torr. Its molecular weight is \_\_\_\_\_\_\_\_.

A) 27 g/mol

B) 54 g/mol

C) 81 g/mol

D) 108 g/mol

Question 4: The number of moles of hydrogen gas present in a 1,500 mL container at 298 K and 2.0 atm pressure is \_\_\_\_\_\_\_\_.

A) 0.65 moles

B) 0.12 moles

C) 0.26 moles

D) 0.52 moles

Question 5: 0.0309 atm is equal to 23.5 cm Hg.

Question 6: 0.500 mole

Question 7: A pressure of 76.0 cm Hg would be equivalent to what height of a water column? The density of mercury = 13.6 g/mL.

A) 5.59 cm

B) 55.9 cm

C) 0.18 cm

D) 1030 cm

Question 8: A gas sample occupies a volume of 8 L at 20 °C. What is the temperature at which the gas would double its volume?

A) 40 °C

B) 10 °C

C) 273 K

D) 586 K

Question 9: If the pressure of a given gas sample doubles, what happens to the volume of gas? The amount of gas and the temperature of the gas stay the same.

A) increase by a factor of 2

B) decrease by a factor of 2

C) stay exactly the same

Question 10: Which of the following gases occupy the smallest volume at STP?

A) 4.032 g H2

B) 1.000 mol of carbon dioxide

C) 35.45 g Cl2

D) 6.022 × 1023 molecules of O2

Question 11: An unknown gaseous substance has a density of 1.06 g/L at 31 °C and 371 torr. If the substance has the following percent composition: 88.8% C and 11.2% H, its molecular formula is \_\_\_\_\_\_\_\_.

A) CH3

B) C2H3

C) C4H6

D) C2H5

Question 12: A 4.23 L sample of a gas is originally at 747 mm Hg at 297 K. The volume occupied by the same quantity of gas under the same temperature and 700. torr is \_\_\_\_\_\_\_\_. 1 atm = 760 torr.

A) 3.96 L

B) 4.51 L

C) 1.88 L

D) 1.68 L

Question 13: The density of sulfur vapor at 1273 K and 740 mm Hg is 0.5977 g/L. Sulfur at that temperature will be \_\_\_\_\_\_\_\_.

A) monoatomic

B) diatomic

C) triatomic

D) tetraatomic

Question 14: A gas occupies a volume of 0.500 L at 125 °C and 0.443 atm. What mathematical expression will yield the correct temperature at 0.750 L and 0.689 atm?

A) (0.689 × 0.750 × 125)/(0.443 × 0.500)

B) (0.443 × 0.500 × 398)/(0.689 × 0.750)

C) (0.443 × 0.500)/(0.689 × 0.750 × 398)

D) (0.689 × 0.750 × 398)/(0.443 × 0.500)

Question 15: Which of the following gases occupy the largest volume at STP?

A) 12.00 g He

B) 2 mol of water

C) 38.00 g F2

D) 6.022 × 1023 molecules of ammonia