An unknown gas effuses 1.38 times faster than krypton. What is the molar mass of the gas?

What is the Celsius temperature of 100.0 g of chlorine gas in a 28.3-L container at 804 mm Hg?

What is the concentration of hydronium when the pH is 1.328

What is the concentration of hydronium when the pOH is 12.6

What mass of 38.4 % KCl (74.551 g/mol) solution contains 5.41 g of KCl?

A solution is prepared by dissolving 56.14 g of KCl (74.551 g/mol) in enough water to make 325.4 mL of solution. What was the molarity of the solution?

Complete the Kb equation below: Use the formatting used in OWL
$F^-_{(aq)} + H_2O_{(l)} <=> OH^-_{(aq)} +$

A solution of Na_2CO_3 (105.989 g/mol) is prepared by dissolving 11.7 g of the Na_2CO_3 in 94 g of water. What was the mass % of the solution?

What principle states that the solubility of a gas in a liquid is proportional to the partial pressure of the gas above the liquid?

- a. Tyndall effect
- b. colloid principle
- c. Henry's law
- d. solubility principle
- e. none of the above

Some assumptions from the kinetic molecular theory are listed below. Which one is most frequently

cited to explain compressibility of a gas?

- a. The volume of the particles is negligible compared to the volume of the gas.
- b. Collisions of gas particles are elastic and total kinetic energy of the gas is constant.
- c. The average kinetic energy of gas particles is proportional to the Kelvin temperature.
- d. A gas consist of tiny particles moving in random straight line motion.

The volume of 372 mL of gas at 25°C is decreased to 53.7 mL at constant pressure. What is the final temperature of the gas in C? format: 123.4

A steel bottle contains argon gas at STP. What is the final pressure (in atm) if the temperature is changed to 101.9°C?

Which of the following instruments directly measures the pressure of a gas?

- a. spectrometer
- b. polarimeter
- c. manometer
- d. gas chromatograph

What concentration of H_2SO_4 solution was used to prepare 33.89 mL of 6.92**M** H_2SO_4 if 0.012 L of the stock were used?

If 20.0 mL of 0.397 **M** H_2SO_4 is titrated with 0.100 **M** NaOH, what volume (mL) of sodium hydroxide is required to neutralize the acid?

$$H_2SO_4(aq) + 2\ NaOH(aq) \rightarrow Na_2SO_4(aq) + 2\ H_2O(l)$$

Which of the following in aqueous solution is a strong electrolyte?

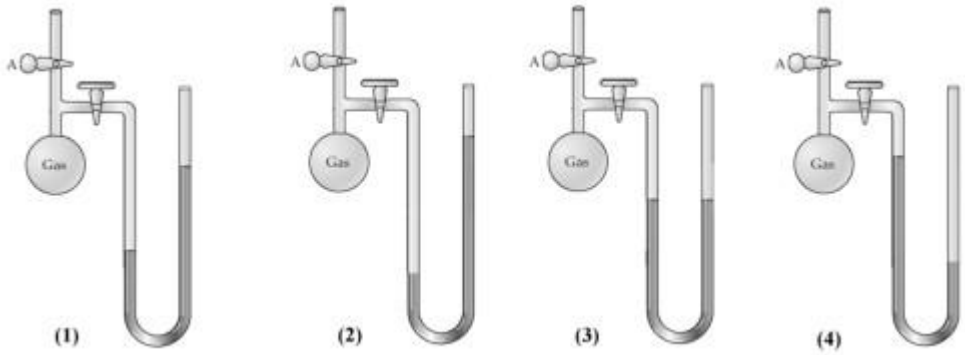
- a. $H_3PO_4(aq)$
- b. $PbCl_2(s)$

- c. KOH(aq)
- d. all of the above
- e. none of the above

In the following reaction, which reactant is a Bronsted-Lowry base?$KC_2H_3O_2(aq) + HCN(aq) \rightarrow HC_2H_3O_2(aq) + KCN(aq)$

- a. KCN
- b. HCN
- c. $KC_2H_3O_2$
- d. $HC_2H_3O_2$
- e. none of the above

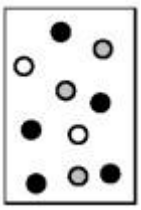
When stopcock A of the open-end manometer shown below is opened, which drawing best represents the result?



- a. drawing (1)
- b. drawing (2)
- c. drawing (3)
- d. drawing (4)

What mass of NaCl (58.443 g/mol) is dissolved in 129 mL of a 4.2 **M** NaCl solution

In the diagram below, helium atoms are represented by unshaded spheres, neon atoms by gray spheres, and argon atoms by black spheres.



If the total pressure in the container is 659.8 mm Hg, what is the partial pressure of helium?