

- 1- Convert 25.0g/HL to units of pounds per thousand gallons.
- 2- A beaker containing 257 grams of H_2SO_4 contains how many moles of H_2SO_4 ?
- 3- The common salt sodium chloride, NaCl , is made up of Na^+ and Cl^- ions. The _____ charged Na^+ ion is called the _____ and the _____ charged Cl^- ion is called the _____.
- 4- In the electrolysis of ferric chloride, FeCl_3 , produces iron metal (Fe^0) and chlorine gas (Cl_2). What are the equations for the oxidation and reduction half reactions?
- 5- What is the empirical formula of a compound containing only phosphorus and chlorine if the compound contains 22.6% phosphorus?
- 6- In the formation of ammonia according to the reaction: $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$
How many moles of nitrogen and hydrogen are required to make x moles of ammonia? How many g of nitrogen (MW = 28) are required to make 5 g of ammonia (MW= 17)?
- 7- A 100ml sample of an aqueous solution of acetic acid, (CH_3COOH , MW = 60), has a mass of 100g and contains 1.5% by mass of the acid. What is the molarity of the acetic acid?
- 8- Which of these pairs would make a good buffer solution?
 - a. Salt of a strong acid / strong acid
 - b. Salt of a strong acid / weak acid
 - c. Salt of a weak acid / weak acid
 - d. Salt of a strong base / weak base
- 9- At a given temperature and pressure, the volume of any ideal gas sample will be determined by the _____.
- 10- For an exothermic reaction, the heat content of the products is _____ than the heat content of the reactants and the ΔH for the reaction has a _____ sign.
- 11- In a 0.0010 molar solution of hydrochloric acid (HCl), what is the concentration of OH^- ? What is the pH of this solution?
- 12- Balance the equation that represents metallic silver dissolving in nitric acid to give Ag^+ and NO :
$$\text{Ag} + \text{NO}_3^- \rightarrow \text{Ag}^+ + \text{NO}$$
- 13- What are the differences between covalent, ionic and hydrogen bonding mechanisms?
- 14- Write structural formulas for ethanol, acetaldehyde and acetic acid.