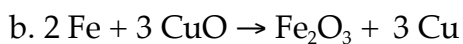
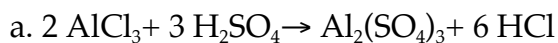


Sample exam 2 key

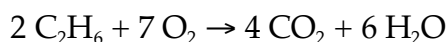
1. How many moles are there in 880.0 g of CO₂?

20.00 mol CO₂

2. Balance the following chemical equations:



c. This is a combustion reaction. You must complete the equation before balancing



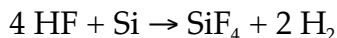
3. Acetylene, C₂H₂, can be produced from methane by the reaction:



How many grams of acetylene can be produced from 64 grams of methane?

39 g C₂H₂

4. According to the equation, what volume of H₂ would be obtained from 4 L of HF, assuming constant temperature and pressure?



Assuming ideal gas behavior, 2 L H₂. Note no assumption about the exact temperature and pressure need be made.

5. Assuming that air is 21.0% oxygen and 71.0% nitrogen by volume, what is the partial pressure of oxygen (in torr) when the atmospheric pressure is 740 torr?

155 torr oxygen

6. A 10.0 L gas sample at 25°C and 700 mm Hg is depressurized to 500 mm Hg and heated to 227°C. What volume does the sample occupy under these conditions?

23.5 L

7. Why are gases so much more compressible than liquids or solids?

Gases lack intermolecular forces that would otherwise fix an individual molecule's position with respect to other molecules.

8. If it takes 1.44 kcal of heat to melt 1.0 mol of solid water (ice), how much heat will be released when 1.0 mol of liquid water freezes and forms ice?

1.44 kcal

9. Which has the greater heat of vaporization, CH_4 or H_2O ?

H_2O

10. Place the following substances in order of **increasing** melting points: KCl , H_2O , H_2S .

H_2O , H_2S , KCl