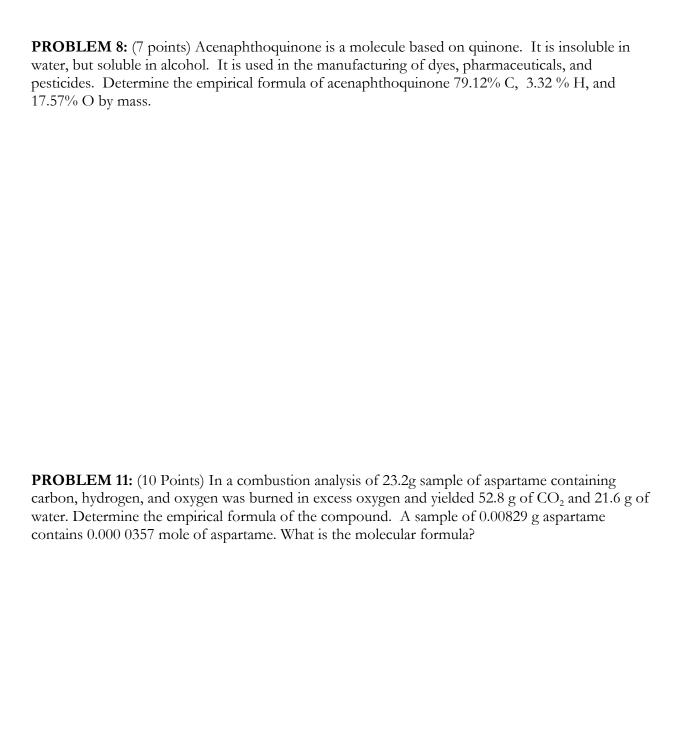
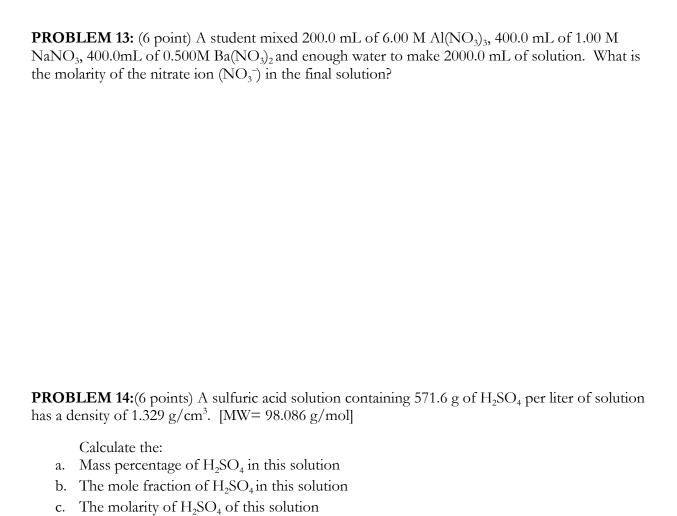
Name
<b>PROBLEM 3:</b> (3 points) What is the molarity of a solution made by dissolving $0.75  \mathrm{g}$ of $\mathrm{C_4H_8O}$ in enough water to make 125-mL of solution?
<b>PROBLEM 7:</b> (7 points) When 29.5 g of methane and 45.0 g of chlorine gas undergo a reaction that has a 85.0% yield, what mass of chloromethane (CH <sub>3</sub> Cl) forms? (The second product is HCl <sub>(g)</sub> )

Alscher SPRING 2019 Exam 2 1 | P a g e



Alscher SPRING 2019 Exam 2 2 | P a g e



Alscher SPRING 2019 Exam 2 3 | P a g e

**PROBLEM 15:** (5 points) Rust stains can be removed by washing a surface of a piece of steel with a dilute solution of oxalic acid  $(H_2C_2O_4)$ .

The reaction is  $\operatorname{Fe_2O_{3(s)}} + 6 \operatorname{H_2C_2O_{4(aq)}} \rightarrow 2 \operatorname{Fe(C_2O_4)_3^{3-}}_{(aq)} + 3 \operatorname{H_2O_{(l)}} + 6 \operatorname{H}^+_{(aq)}.$ 

What mass of rust can be removed from the surface of steel by 1.0L of a 1.14M solution of oxalic acid?

**PROBLEM 17:** (10 points) A precipitate forms when aqueous sodium sulfide is mixed with aqueous copper(II) chloride. Calculate the mass of the precipitate that forms when 75.0 mL of 1.50 M sodium sulfide is mixed with 100.0 mL of 0.500 M copper(II) chloride. Hint: Write the equation for the reaction.

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