Lab Sheet: Percentage Composition of Magnesium Oxide

SCH3U_2018-2019 **NAME:** _______________

Complete the following Data Tables:

Data Table I: Quantitative Data

Quantity	**Mass (± 0.01 g)**
Mass of crucible and cover	
Mass of crucible, cover, and magnesium	
Mass of crucible, cover, and oxide of magnesium after first heating	
Mass of crucible, cover, and oxide of magnesium after second heating	

Data Table II: Qualitative Data

initial observation	
observation during heating	
observations at the end of final heating	

a. What was the evidence of a **chemical** reaction taking place during the heating process?

____

____

b. Calculate the mass of the magnesium:

mass: _______________

c. Calculate the mass of the magnesium oxide:

mass: _______________

d. Calculate the mass of the oxygen and the experimental percentage of oxygen contained in the oxide of the magnesium:

mass of oxygen: ___________ experimental % of oxygen: ___________

e. Calculate the experimental percentage of magnesium in the oxide of magnesium

experimental % of magnesium: _____

f. i. State the theoretical value for the percentage of magnesium and percentage of oxygen in magnesium oxide.

Theoretical % of magnesium: _____ Theoretical % of oxygen: _____

ii. Calculate the percentage error

percentage error in % of magnesium: _____ percentage error in % of oxygen: _____

g. What was the evidence of reaction occurring during the heating process?

_____

_____

h. If some of the magnesium oxide had escaped from the crucible, would the percentage composition of magnesium be too high or too low. Explain.

Circle the correct option: High or Low ?

Explanation: _____

_____

i. Write balanced chemical equations for:

i. The reaction of magnesium with oxygen gas.

_____

ii. For the reaction of magnesium with nitrogen gas

_____

j. If at the end of the heating the crucible containing the oxide had a black coating, explain the nature of the black coating on the crucible and the cause of the blackness, and explain a modification to correct this error.

Chemical name: _____

cause: _____

modification: _____

_____

k. How could you ensure that all the magnesium had been converted into magnesium oxide?

_____