

Chem 1161 Quiz 9 (15 points) Last 4 digits of your ID: _____

Time 30 min. A Periodic Table that contains no elements names can be used.

1. Differentiate and explain your choice of open, closed, and (almost) isolated systems among the following (3 points)

a) the Moon

b) aquarium

c) gas cylinder with ammonia

2. Calculate the temperature change that results from adding 50 J of heat energy to each of the following (6 points):

a) 0.75 mol of He ($C = 20.786 \text{ J mol}^{-1} \text{ K}^{-1}$)

b) 0.50 mol of carbon tetrachloride ($C = 131.75 \text{ J mol}^{-1} \text{ K}^{-1}$)

3. When a 5 g sample of KClO_3 dissolves in 250 g of water in a coffee-cup calorimeter, the temperature drops from 298.00 K to 296.36 K. Calculate the molar heat of solution of KClO_3 (6 points):