Chemistry 141 Name

Dr. Cary Willard

Quiz 5a March 4, 2010

Data , Specific heat water = 4.184 J/mol K, 

1. (6 points) A 0.0500 mole sample of methane effuses through a hole in 4.65 minutes. If a 0.0500 mole sample of an unknown gas effuses through the same hole in 7.28 minutes, what is the molar mass of the unknown gas?
2. (4 points) Under what conditions will a real gas behave most ideally?
3. (4 points) A system releases 125 kJ of heat while 104 kJ of work is done on it. Calculate E.
4. (6 points) If a 68.0 g chunk of metal is heated to 200oC in an oven and dropped into a beaker containing 350.0 g of water at 25.0oC the water warms to 53.5oC. What is the specific heat of the metal?

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Quiz 5b March 4, 2010

Data , Specific heat water = 4.184 J/mol K, 

1. (6 points) A 0.0500 mole sample of methane effuses through a hole in 4.65 minutes. If a 0.0500 mole sample of an unknown gas effuses through the same hole in 9.51 minutes, what is the molar mass of the unknown gas?
2. (4 points) Under what conditions will a real gas behave most ideally?
3. (4 points) A system releases 125 kJ of heat while 74 kJ of work is done on it. Calculate E.
4. (6 points) If a 48.0 g chunk of metal is heated to 200oC in an oven and dropped into a beaker containing 350.0 g of water at 25.0oC the water warms to 53.5oC. What is the specific heat of the metal?