Chemistry 141 - 4081 Name .

Dr. Cary Willard

Quiz 5E (20 points) October 2, 2007

* specific heat of ice 2.06 J/goC 0.91 kJ/moloC
* specific heat of water 4.184 J/goC 7.54 kJ/moloC
* specific heat of steam 2.0 J/goC 0.92 kJ/moloC
* heat of fusion 333 J/g 6.01 kJ/mol
* heat of vaporization 2226 J/g 40.67 kJ/mol

1. (10 points) A 1.500 gram sample of a ketone with the molecular formula C12H26O is burned in a bomb calorimeter that has a heat capacity of 45.06 kJ/oC. The temperature of the calorimeter increases by 3.413oC. Calculate the energy of combustion of the ketone per gram and per mole.
2. (10 points) Steam at 100.0oC was bubbled through 350.0 g of water in a beaker originally at 25.4oC. What mass of steam condensed into the water if the final temperature of the sample was 85.3oC?

Chemistry 141 - 4081 Name .

Dr. Cary Willard

Quiz 5F (20 points) October 2, 2007

* specific heat of ice 2.06 J/goC 0.91 kJ/moloC
* specific heat of water 4.184 J/goC 7.54 kJ/moloC
* specific heat of steam 2.0 J/goC 0.92 kJ/moloC
* heat of fusion 333 J/g 6.01 kJ/mol
* heat of vaporization 2226 J/g 40.67 kJ/mol

1. (10 points) A 1.500 gram sample of a ketone with the molecular formula C12H26O is burned in a bomb calorimeter that has a heat capacity of 45.06 kJ/oC. The temperature of the calorimeter increases by 4.413oC. Calculate the energy of combustion of the ketone per gram and per mole.
2. (10 points) Steam at 100.0oC was bubbled through 450.0 g of water in a beaker originally at 25.4oC. What mass of steam condensed into the water if the final temperature of the sample was 85.3oC?