**Mole HomeWork 8**

**Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_/5**

 **MW(g/mol): 330 32 44 18**

 **C11H22O11 + 11O2🡪 11CO2 +11H2O**

**1) Your body metabolizes sucrose (sugar=C11H22O11)) according to the balanced**

 **reaction written above.**

 **You drink a 12 oz can of Coke which contains 44 g of sucrose. Your `yield’ of CO2**

 **After metabolizing this amounts to 58.08 g. What is the efficiency (% yield) your**

 **body’s metabolism is operating at ?**

**step 1: convert grams sugar🡪 moles sugar 44 g/330 g mol-1 =0.1333 mol sugar**

**step 2: set up ratio of theory mol CO2/mol sugar= 11/1=x/0.1333**

 **solve for theory mol CO2 => 0.1333\*11=1.4667 mol CO2**

**step 3: convert theory mol CO2 to mass: 1.4667\*44=64.5333**

 **step 4: compute % yield = 100\*actual g CO2/theory g CO2=100\*58.08/64.533 \_\_= 90%\_\_ % (2 pts)**

**2) Write the balanced and complete molecular, complete ionic and net ionic**

 **equation for the reaction between Na3PO4(aq) and AgNO3(aq) . Note that Ag3PO4**

 **forms a precipitate (e.g. is written as Ag3PO4(s)) . All other salts are aqueous**

 **(3 pts)**

**complete molecular**

**Na3PO4(aq) + 3AgNO3(aq) 🡪 Ag3PO4(s) + 3NaNO3(aq)**

**complete ionic**

**3Na+ + PO43- +3 Ag+ + 3NO3- 🡪 Ag3PO4(s) + 3Na+ + 3NO3-**

**net ionic**

**3Ag+ + PO43- 🡪 Ag3PO4(s)**