EVE 290
Introduction to Environmental Engineering
Fall 2010
Homework #12

1. Calculate the theoretical oxygen demand (TOD) of a water sample containing 1000 mg/L of $C_5H_7O_2N$ (bacterial tissue). Yes, I know we didn't cover this in lecture…Do it anyway! **(ans: 1416 mg/L)**

2. A 5-day BOD test is performed on a sample of raw wastewater. Six milliliters of wastewater sample are added to 300-mL BOD bottles and mixed with dilution water. The average DO concentration of the diluted wastewater samples on the first day of the test was 7.6 mg/L and after incubation at 20° C for 5 days was 2.6 mg/L. Calculate BOD_5. **(ans: 250 mg/L)**

3. A BOD_5 test is performed on a sample of chlorinated wastewater effluent. Sixty milliliters of wastewater and 2 mL of "seed" are added to a 300-mL BOD bottle and mixed with enough dilution water to fill the bottle. For the other bottle (the control), 2 mL of "seed" are added to a 300-mL bottle and mixed with enough dilution water to fill the bottle. The [DO] of the wastewater sample and control were 6.8 and 7.4 mg/L, respectively. After incubation at 20° C for 5 days, the [DO] of the sample and control were 2.5 and 7.1 mg/L, respectively. Calculate the BOD_5 of the chlorinated effluent. **(ans: 20.3 mg/L)**