Exercise # 7: Predicting and Computing Reactivity & Selectivity Trends in the Halogenation of Higher Alkanes Organic Chem I Alfred State College

**7.1 carbon degree**

**a) Indicate where the 1, 2 and 3o carbons (if any) are in the C6H14 isomers below:**

I II III

**I II III**



IV V

1. **If you monochlorinate the above compounds how many unique chloride**

**isomers are created ?**

I II III VI V

# unique

monochlorides \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

**7.2. Reactivity Trends**

**Which pair of reactants do you expect to react fastest?**

a) F2 + 3o C in CH(CH3)3 vs I2  + 3o C in CH(CH3)3

b) Cl2 + 2o C in CH3CH2CH3 vs Cl2 + 1o C in CH3CH2CH3

c) Cl2 + 3o C in CH(CH3)3 vs Cl2 + 1o C in CH(CH3)3

**7.3 Selectivity Trends**

**Which pair of reactants will produce the highest selectivity for the indicated C**

**a)** Br2 + 3o C in **C**H(CH3)3 vs Cl2  + in **C**H(CH3)3

b) Cl2 + CH3**CH2**CH3 vs Br2 + CH3**C**H(CH3)2

c) F2 + CH3**C**H2CH3 vs Br2 + CH3**C**H(CH3)2