HOMEWORK ASSIGNMENT #5 ORGANIC CHEMISTRY II

Reaction predictions for dienes ; allyls and benzene substitutions \_\_\_/25

**Your name: \_\_\_\_\_\_answers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 pt**

**6.1a Predict all the likely products of radical allylic substitution of Br\* on:**



 A B

2 pts

*Pi shift secondary product shown here is not likely since resonance to reach it is unsymmetric and* the site is 2o whereas its primary form is 1o **(A)**



**6.1b Circle product(s) above arising from symmetric radical intermediates.**

1 pt

**6.2a What are the possible products of the base-driven alkenyl hydrolysis**



2 pts



1 pt

**Both equally stable**

**6.2b Which of the products is most thermodynamically stable ?**

**6.3 what does this make ?**

**Russianspacecraftene**





2 pts

**Angelfishone**

2 pts





**\_\_\_/11**

**6.4. Predict all the likely possible products of the addition of HBr below**





5 pts

**Primary carbocations secondary carbocations**

*Br-- attached to each + site to form final products (five)*

1 pt

**Circle the most likely kinetic product (assuming carbocation mechanism)**

**6.5. Aromatic basics**

**Name the three criteria necessary for the property of aromaticity to exist in a molecule: (3 pts)**

**1)\_\_\_\_\_\_\_\_\_\_\_\_rigidly flat\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2)\_\_\_\_\_\_\_\_\_\_\_\_\_alternate double-single bonds\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3)\_\_\_\_\_\_\_\_\_pi count = 4n+2 (Huckel rule obeyed), n=0,1,2…\_\_\_\_**

**Decide which of the molecules below are aromatic: (4 pts total)**

1. **1,3-butadiene YES NO**
2. **1,3-cyclobutadiene YES NO**



1. **YES NO**



1. **YES NO**

**\_\_\_/14**