HOMEWORK ASSIGNMENT #5 ORGANIC CHEMISTRY II

**alkadiene and allylic electronic follies**

(due Friday 3 March )

**Your name :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (~~25~~ points total)**

**5.1. alkadiene resonance behaviors**

a) Draw the possible carbocations formed when 2-methyl-1,3 butadiene is reacted with HBr in acetic acid assuming initial H+ attack produces a Markovnikoff addition (4 pts)



b) draw all the possible monobromination products from the above (2 pts)



1. based on thermodynamic stability , which product above is most likely ? (1 pt)



d) based on the text’s comments about kinetic control (the pi electrons don’t move that



fast) which is the most likely product ? (2 pts)

5.2a. Predict all the likely products of radical allylic substitution of Br\* on:





2 pts

**symmetric radical result🡪**

5.2b Circle product(s) above arising from symmetric radical intermediates.

2 pts

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5.3a What are the possible products of the base-driven alkenyl hydrolysis





2 pts

A B

1 pt

5.3b Which of the products is most thermodynamically stable ? both ok via Saitsev rule

**Russianspacecraftene**





2 pts

**Angelfishone**

2 pts





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



5 pts





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