

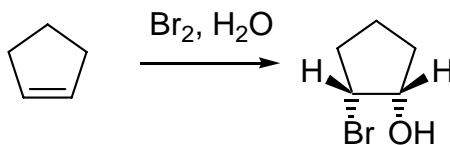
NAME: _____

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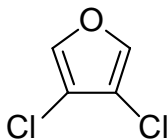
(1-10) are True or False.

- 1) Ethers make good solvents for reactions since they are polar and generally unreactive.
- 2) Cyclopropane is a heterocycle.
- 3) Pyran is a heterocycle.
- 4) Both ether and epoxide oxygen atoms are normally sp^3 hybridized and have two lone pairs.
- 5) Normal ethers are more reactive than epoxides because of their ring strain.

6)



7)

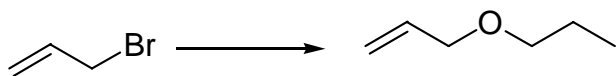


is correctly named as 3,4-dibromofuran

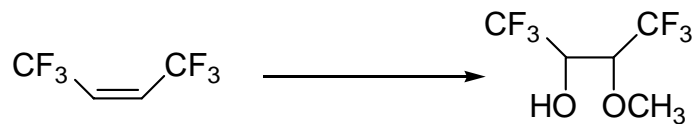
- 8) Symmetrical ethers have identical substituents bound to either side of the oxygen atom.
- 9) Concerted reactions (like an S_N2 reaction) proceed in a single step with simultaneous bond formation and bond breakage.
- 10) Crown ethers (such as 18-crown-6) are correctly described as macrocyclic polyethers.

11-14) Give the reagents for the following reactions.

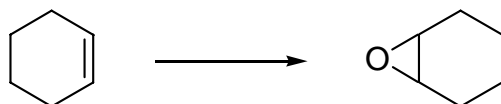
11)



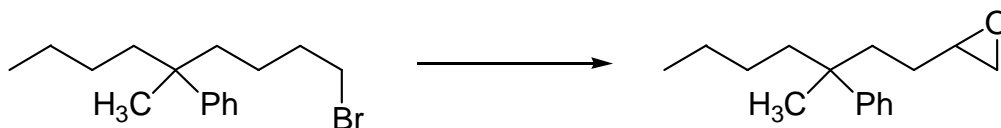
12)



13)

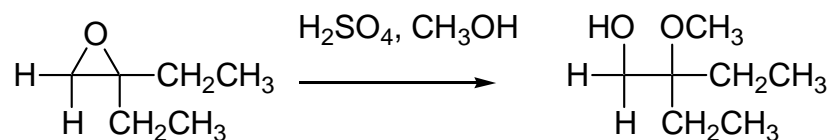


14)



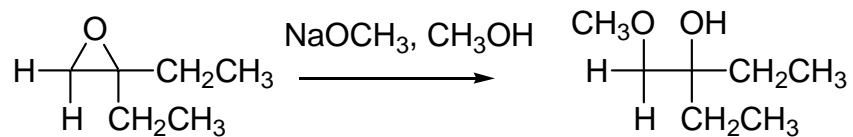
15) What is the main difference between an ether and a peroxide?

16-17) Provide an explanation for why the following acid promoted nucleophilic attack proceeds exclusively with the shown regiochemistry.



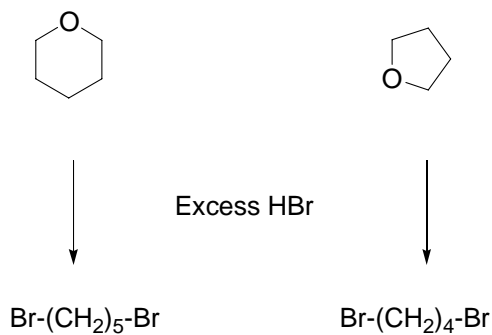
18) Who invented the Williamson Ether Synthesis?

19-20) Provide an explanation for why the following nucleophilic attack proceeds exclusively with the shown regiochemistry.



BONUS QUESTION for up to 2 extra points

Predict and justify which of the following reactions would proceed faster.



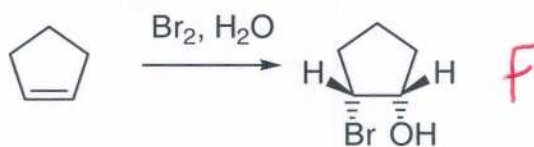
NAME: SADIE MAJICWORD

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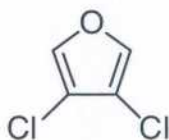
(1-10) are True or False.

- 1) Ethers make good solvents for reactions since they are polar and generally unreactive. **T**
- 2) Cyclopropane is a heterocycle. **F**
- 3) Pyran is a heterocycle. **T**
- 4) Both ether and epoxide oxygen atoms are normally sp^3 hybridized and have two lone pairs. **T**
- 5) Normal ethers are more reactive than epoxides because of their ring strain. **F**

6)



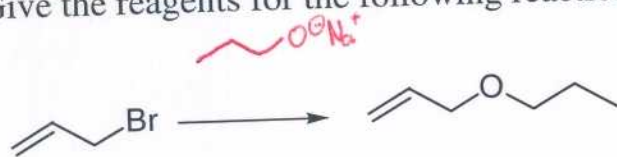
7)

is correctly named as 3,4-dibromofuran **F**

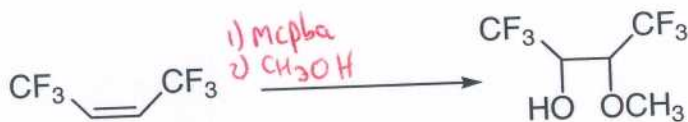
- 8) Symmetrical ethers have identical substituents bound to either side of the oxygen atom. **T**
- 9) Concerted reactions (like an S_N2 reaction) proceed in a single step with simultaneous bond formation and bond breakage. **T**
- 10) Crown ethers (such as 18-crown-6) are correctly described as macrocyclic polyethers. **T**

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11)



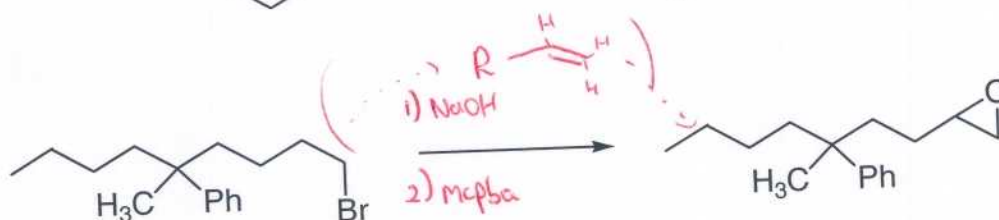
12)



13)



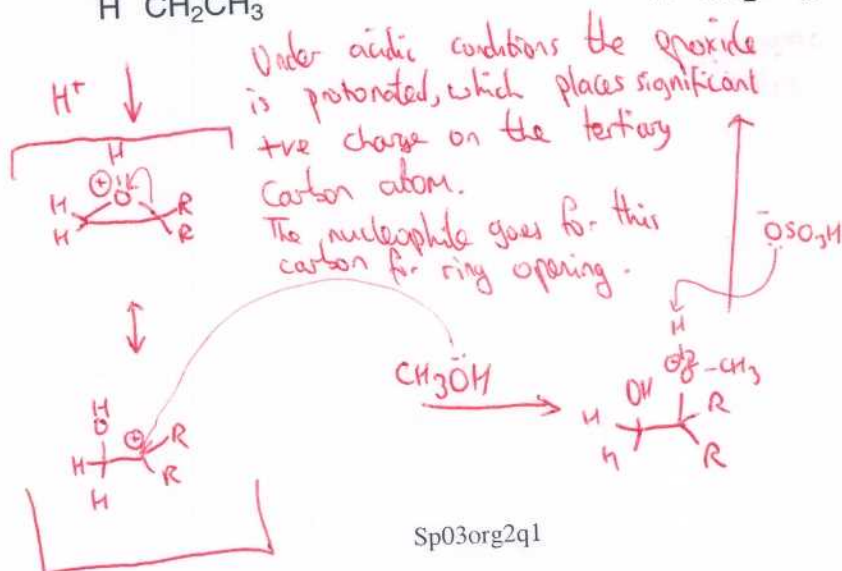
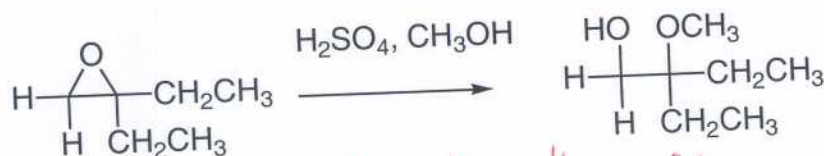
14)



15) What is the main difference between an ether and a peroxide?

An ether has the structure $\text{R}-\ddot{\text{O}}-\text{R}$, and a peroxide has $\text{R}-\ddot{\text{O}}-\ddot{\text{O}}-\text{R}$.

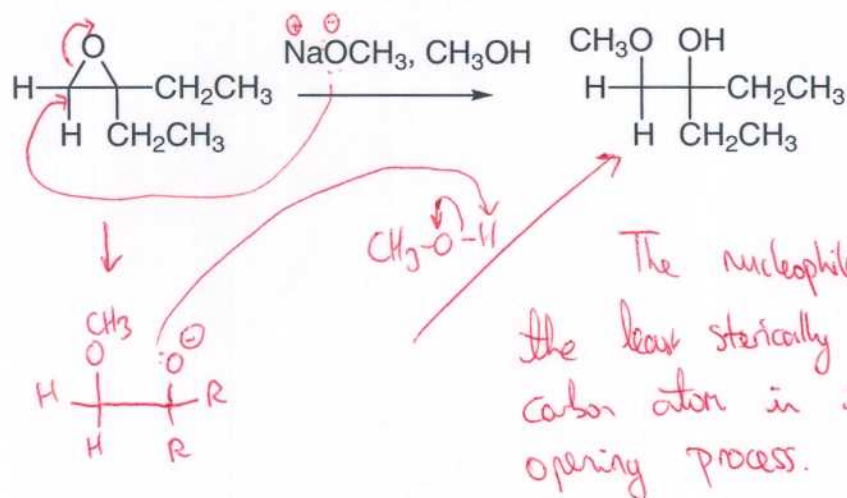
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18) Who invented the Williamson Ether Synthesis?

Williamson

19-20) Provide an explanation for why the following nucleophilic attack proceeds exclusively with the shown regiochemistry.



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