

NAME: _____

If you object to your graded script being placed in a box outside my office then check here _____

(1-10) are True or False.

- 1) Benzene is most stable in the chair conformation.
- 2) Oxetane has less ring strain than 1,4-dioxane.
- 3) 1,3-Butadiene contains four sp-hybridized carbons.
- 4) Kinetic products are always formed in lesser amounts than thermodynamic products.
- 5) Straight chain ethers react rapidly with nucleophiles.

6)

The oxygen atom in this ether
is sp³ hybridized

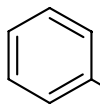


7)



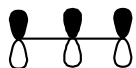
is aromatic

8)



is aromatic

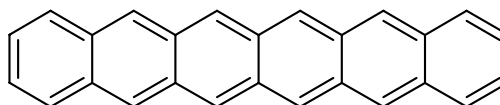
9)



represents a bonding
Molecular Orbital

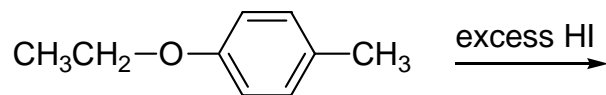
10)

This compound is aromatic



11-17) Give the products for the following reactions (and indicate stereo/regiochemistry where applicable).

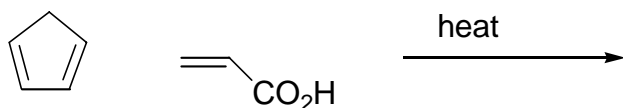
11)



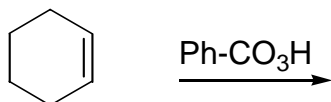
12)



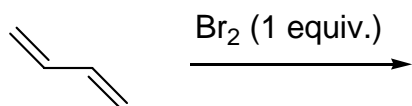
13)



14)

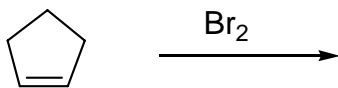


15)

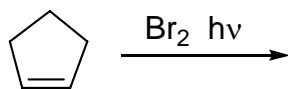


(HINT: 1/2 point for each product)

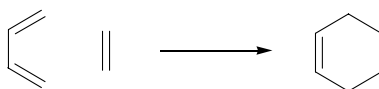
16)



17)

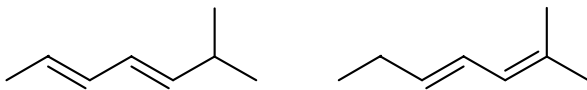


18) Write the mechanism (CURLY ARROWS) for the following Diels-Alder Reaction.

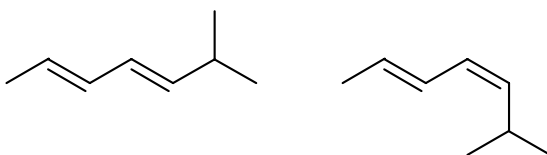


19-20) Circle the more stable molecule in each pair.

19)

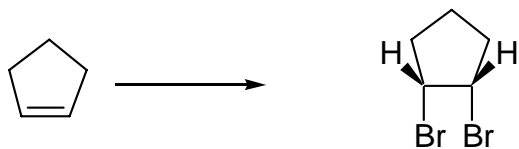


20)



BONUS QUESTION for 1 extra point

Using as many steps as you wish, how would you achieve this transformation?



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X.O. VEREZE

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6)

The oxygen atom in this ether is sp³ hybridized**T**

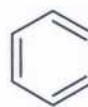
7)



is aromatic

T 6π

8)



is aromatic

T 6π

9)

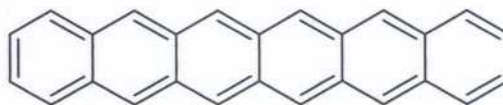


represents a bonding Molecular Orbital

T

10)

This compound is aromatic

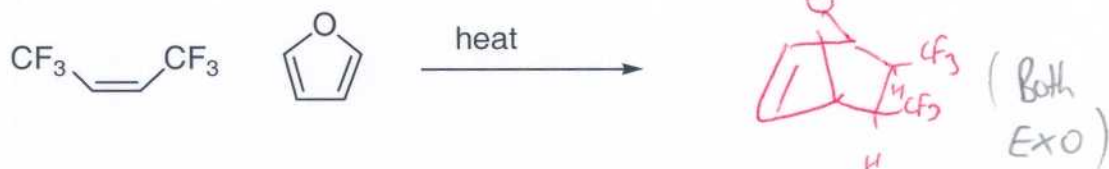
**T** 26π.
(6x4) + 2 = 26

11-17) Give the products for the following reactions (and indicate stereo/regiochemistry where applicable).

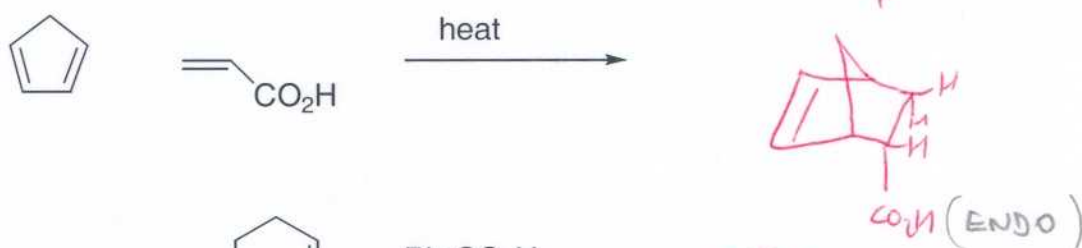
11)



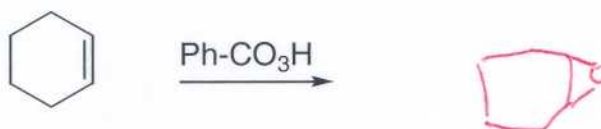
12)



13)



14)



15)



16)



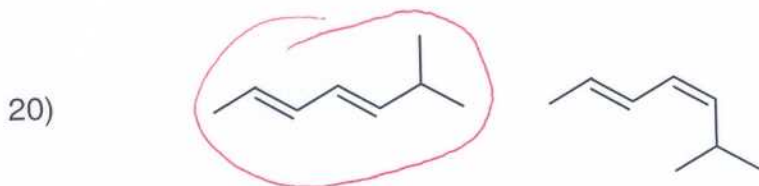
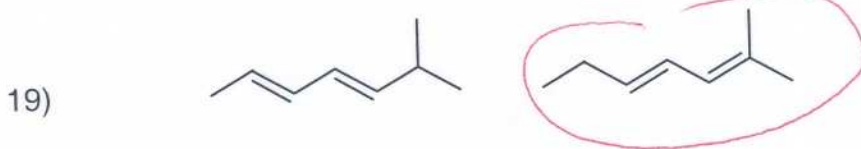
17)



18) Write the mechanism (CURLY ARROWS) for the following Diels-Alder Reaction.

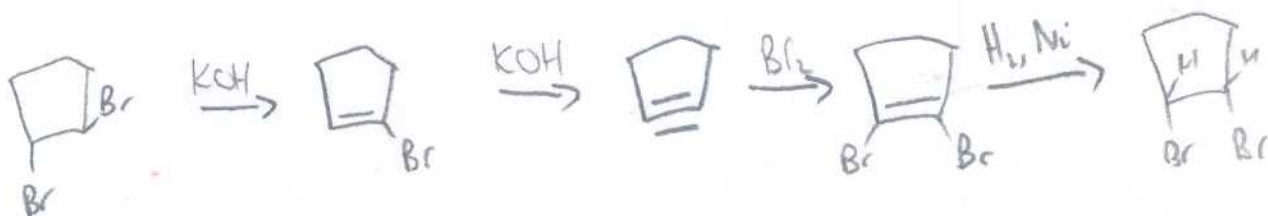
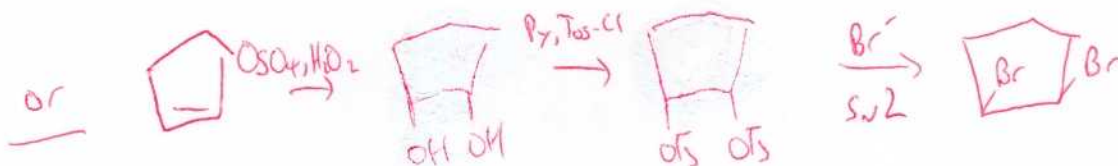
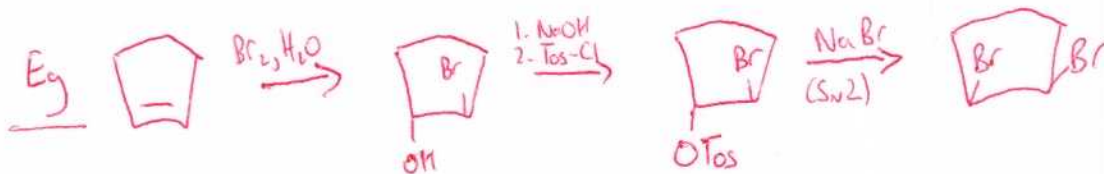


19-20) Circle the more stable molecule in each pair.



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Accept
this
(with
work though)