

Simulated Exam II (SF150c1E2B)

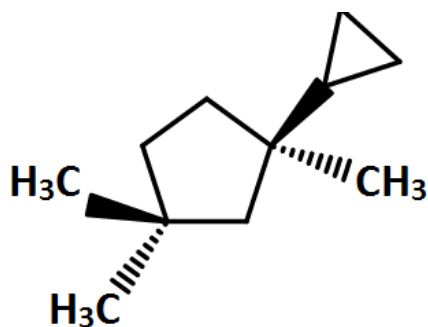
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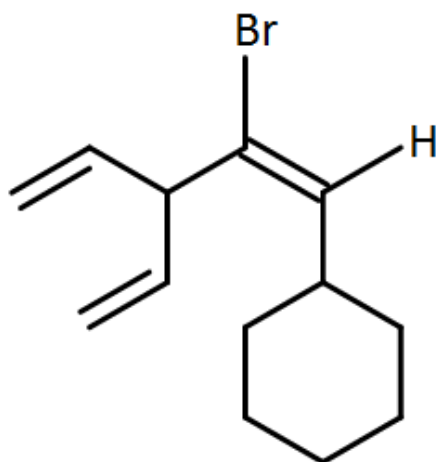
UHScienceResource@gmail.com

A. Nomenclature: Name each of the compounds in the box provided using IUPAC naming including stereochemistry if applicable. Use a Fischer Projection for question 3 (15).

1.



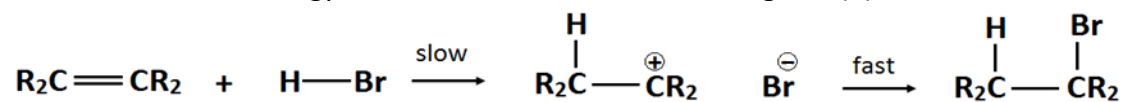
2.



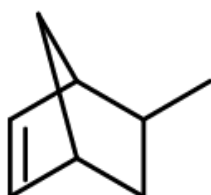
3. (4S,5S)-2,2,5-tribromo-4-ethyl-5-methylnonane

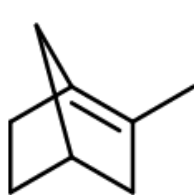
B. Facts (29)

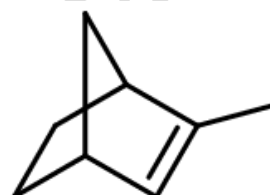
1. Draw the lower energy transition state for the reaction given (4).



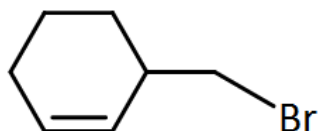
2. For those given below, rank in order of increasing stability (1 = least, 3 = most), (3).

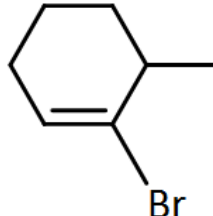


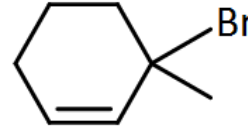




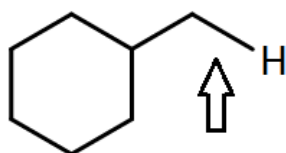
3. For those given below, rank in order of increasing E1 reactivity (1 = least, 3 = most), (3).

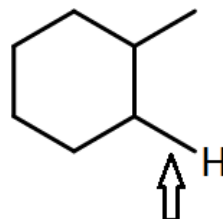


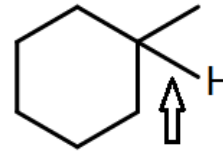




4. For those given below, rank in order of increase BDE for the specific bond (1=lowest, 3=highest), (3).

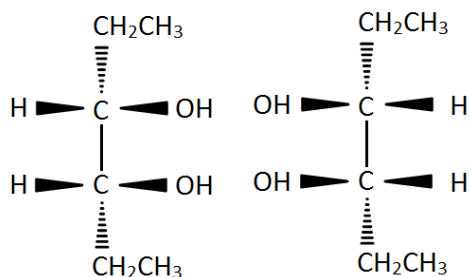




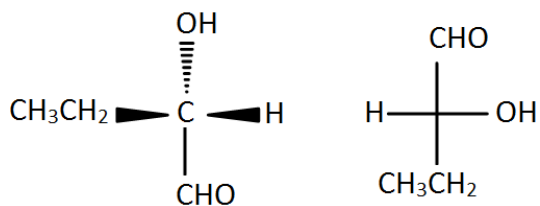


5. Indicate each pair as identical, enantiomers, structural isomers or diastereomers (9).

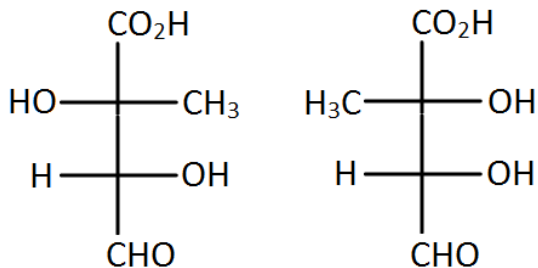
a.



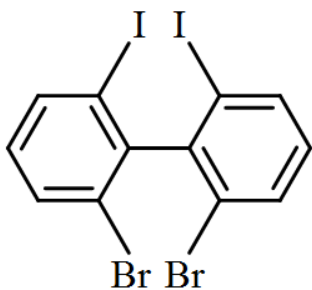
b.



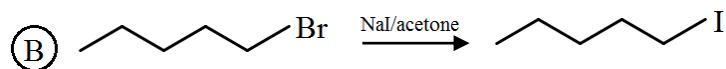
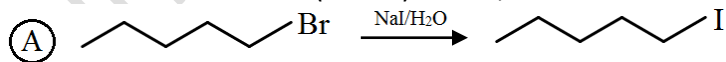
c.



6. Chiral or achiral? (3)



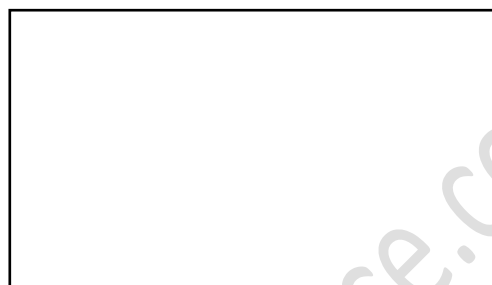
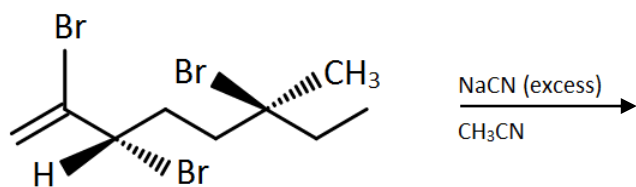
7. For the two reactions (A or B) below, which is faster or are do they occur at the same rate? (4)



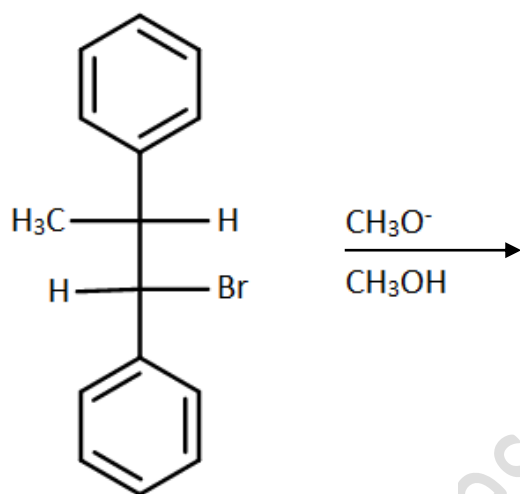
C. Reactions (36)

Draw the product with stereochemistry when appropriate. Give the major product if more products exists that boxes provided.

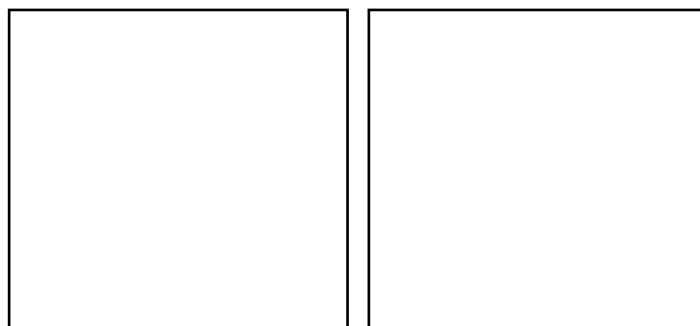
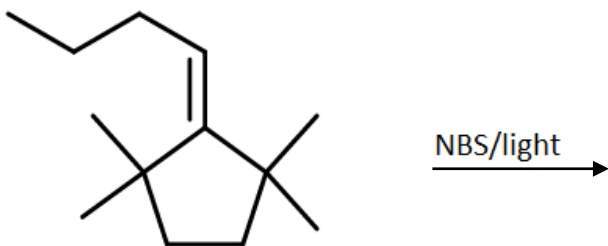
1.



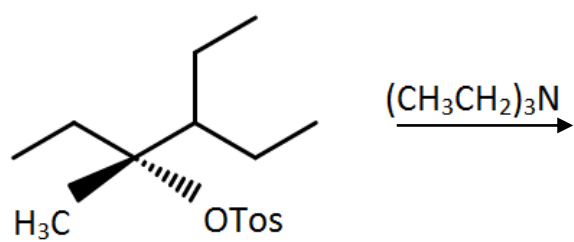
2.



3.



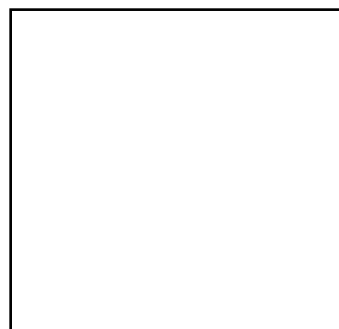
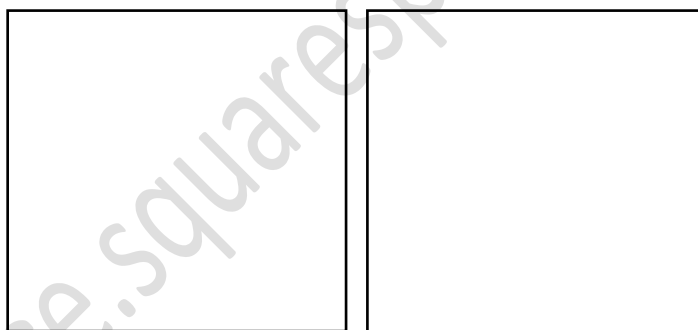
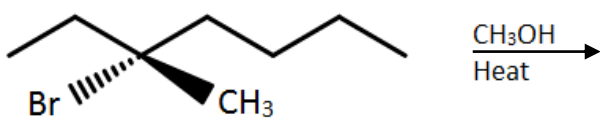
4.



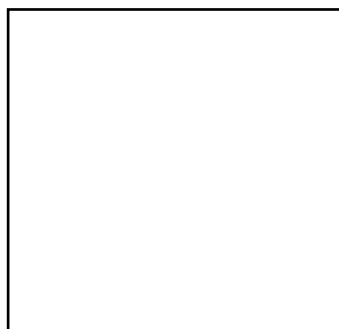
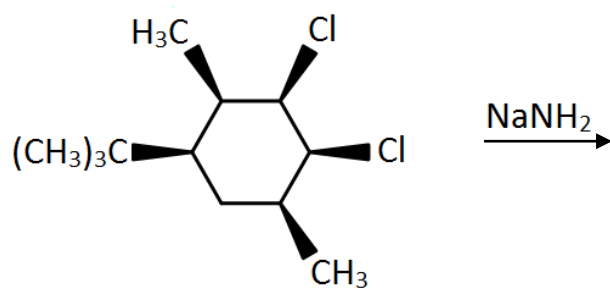
Major

Minor

5.

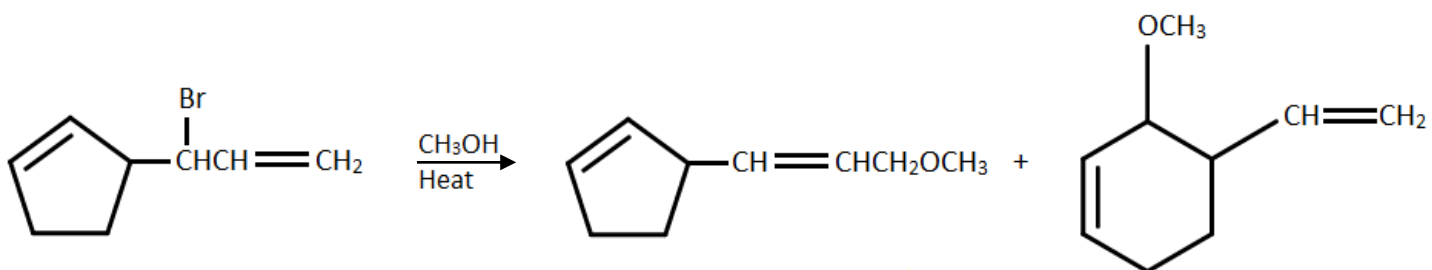


6.



D. Mechanism (10)

Give the mechanism to form the products given below using curved arrows. Show all intermediates and formal charges.



E. Synthesis (10)

Synthesize the given molecule using cyclohexane, alkanes of 4 carbons or less with any inorganic reagents.

