Model Questions

Stereochemistry

For Semester I and Semester II

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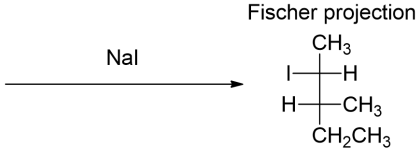
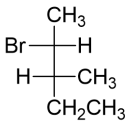
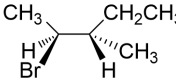
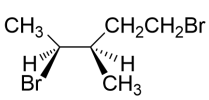
Model Questions
Organic Stereochemistry

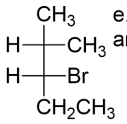
1. . What is the structure of the reactant that would yield the product shown?



a. 

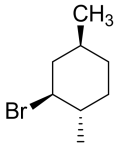
b. 

c. 

d. 

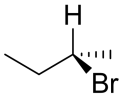
e. none of these answers

2. How many (max. no.) of possible stereoisomers (enantiomers + diasteromers) are there of the molecule shown below

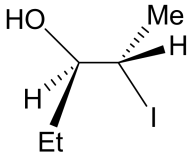


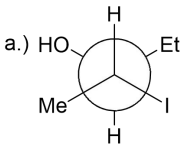
a) 1 b) 2 c) 8 d) 5 e) 4

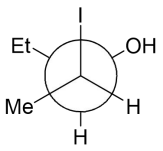
3. Provide the IUPAC name for the molecule shown below:

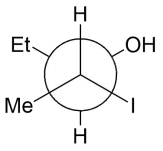


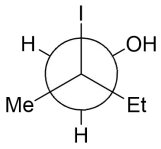
4. Which one is the enantiomer of this compound?



a.) 

b.) 

c.) 

d.) 

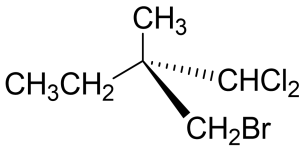
e.) none of these answers

5. Which is the identical molecule of the compound shown in question 4 ?

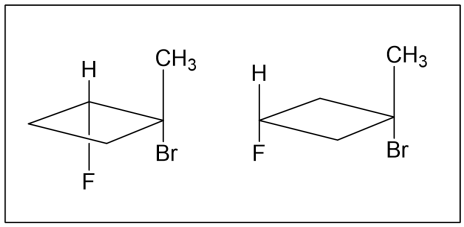
6. Which is the constitutional isomer of the compound shown in question 4 ?

7. Which is the diastereomer of the compound shown in question 4?

8. Assign a configuration (R or S) to the following molecule.



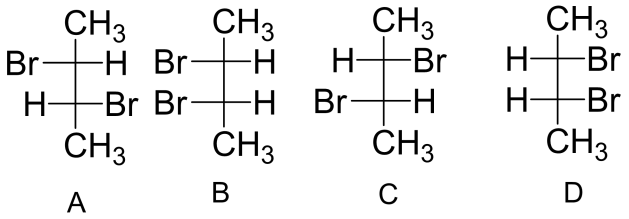
9. What is the correct stereo chemical description of the relationship between this pair of molecules?



a) identical b) constitutional isomer c) enantiomers d) diastereomers e) none of these

10. What is the correct stereochemical description of the relationship between structures A and B?

Fischer Projections



(a) Identical (b) constitutional isomers (c) enantiomers (d) diasteromers (e) none of these answers.

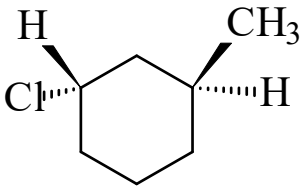
11. What is the correct stereochemical description of the relationship between structures A and C in question 24?

(a) Identical (b) constitutional isomers (c) enantiomers (d) diasteromers (e) none of these answers.

12. What is the correct stereochemical description of the relationship between structures B and D in question 24?

(a) Identical (b) constitutional isomers (c) enantiomers (d) diasteromers (e) none of these answers.

13. Give the correct IUPAC name for the following compound



14. Optical rotation of an optically active substance having concentration 1 g/ml is found to be $+5^0$ when measured in a polari meter with tube length of 1 m. Calculate the specific rotation of the sample. The specific rotation value in literature is found to be $+ 36{\cdot}5^0$. – explain the anomaly.

15. Suggest a procedure for resolving racemic alcohols. Why racemic alcohols are not resolved by converting them into diastereomeric esters?

16. What do you mean by chiral environment? Show that the environment of an achiral substance could be chiral.

17. Find out the homomorphic ligands and also find out their topic relationship.