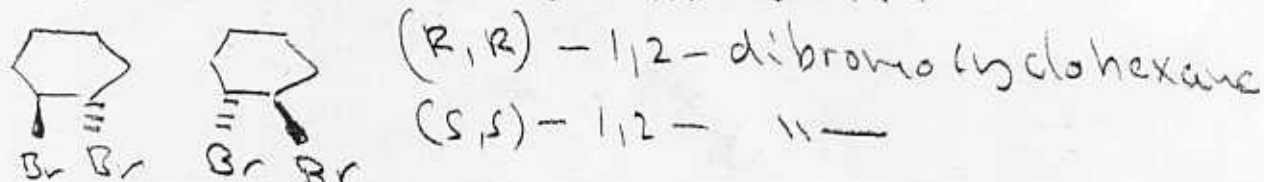


1. Let's discuss the addition to bromine to cyclohexene:

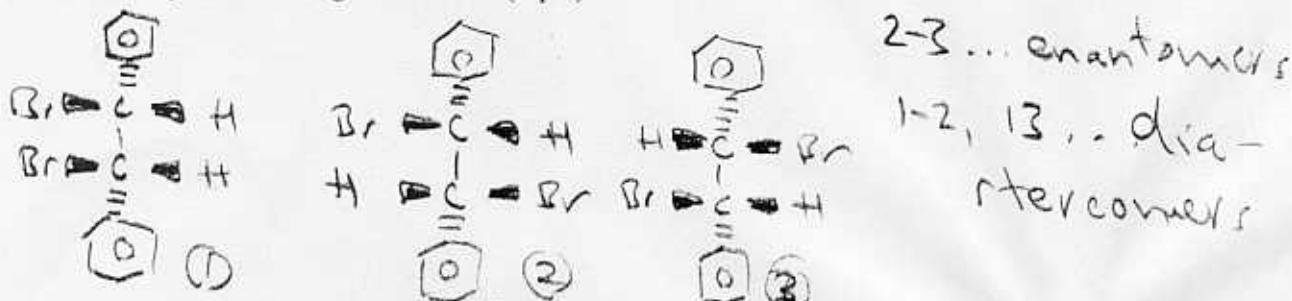
a. Show wedge structures and valid names for the product(s) you expect! (4 pts)



b. How many chiral centers are in the product(s)? (2 pts)

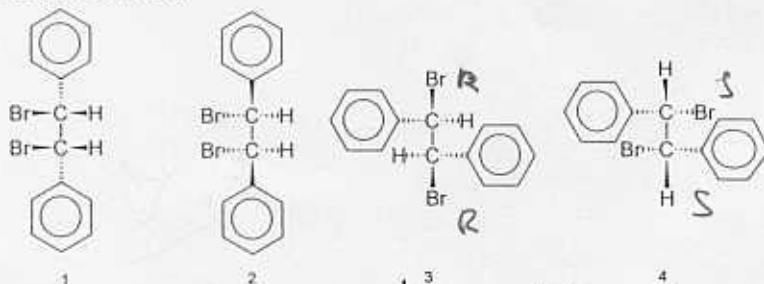
2

2. Show all possible isomers of 1,2-dibromo-1,2-diphenylethane and state their relationships. Use wedge formulas. (4 pts)



3. Indicate any correct statements: (a) "I could have used bromine rather than pyridinium perbromide to accomplish last week's bromination" (b) "acetic acid is a good solvent for pyridinium perbromide" c) "I could have used trans-stilbene instead of cis-stilbene and obtained the exact same product", (d) "acetic acid is a good solvent for pyridinium bromide" (4 pts)

4. Consider the four valid wedge representations shown below and consider their relationships. Each two could be identical, constitutional isomers, enantiomers or diastereomers.



a. What are 1 and 2? (2 pts) identical

b. What are 1 and 3? (2 pts) diastereomers

c. 3 and 4? (Hint: this is the most difficult case, it is easiest to solve if you assign R and S to the chiral centers in both molecules and then decide) (2 pts) enantiomers