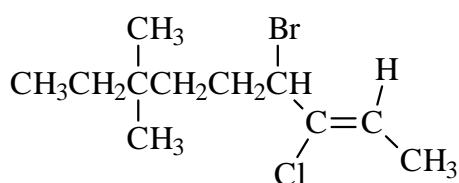


CHEMISTRY 59-230/232**FIRST TEST****Time 50 Min****October 7, 1999****NAME:** _____**ID #:** _____**LABORATORY DAY:** _____

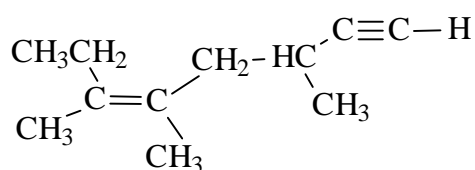
*READ ALL QUESTIONS CAREFULLY AND ANSWER THE QUESTION ASKED!! Answer all questions on the test paper. An extra sheet has been attached for rough work which will not be marked. Only the **FIRST** answer to any question will be considered. Point values for each question are given. There are 6 questions and 4 pages in this test and the available points total 100.*

1. Give an acceptable name for each of the following structures. If stereochemistry is important, make sure your name includes this. [5 points each]

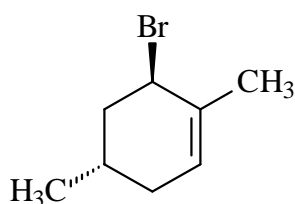
(a)



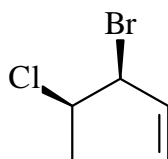
(b)



(c)



(d)



2. Draw the structure, including stereochemistry, which corresponds to each of the following IUPAC names. Drawings that show only carbon and other non-hydrogen atom are sufficient. [5 points each]

(a) (2E,6E) 5-ethyl-3,7-dimethylnona-2,6-diene

(b) 4-(2-methylbut-1-yl)cyclohexene

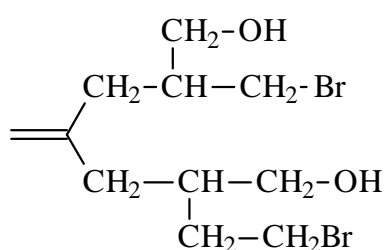
(c) 3,3-dimethyl-1,4-cycloheptadiene

(d) (Z) 3-bromo-2-ethyl-1,3-hexadiene

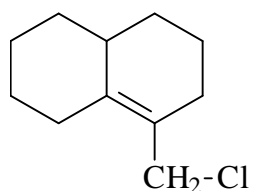
3. (a) Draw the 3-D drawing (NOT the Newman projection) of the more stable chair conformation of 1-bromo-4-methylcyclohexane in its less stable configuration. Label the substituents as axial (a) or equatorial (e). [10 points]

(b) Draw the NEWMAN projection of 2-bromopentane viewed down the C2-C3 bond in the least stable synclinal conformation. [5 points]

(c) Assign the correct priorities to the two chains shown below. Using the notation C(A,B,C) show how you arrived at your answer [4 points]



(d) Assign the correct stereochemical designator (E or Z) to the alkene shown below. Show how you arrived at your answer. [4 points]

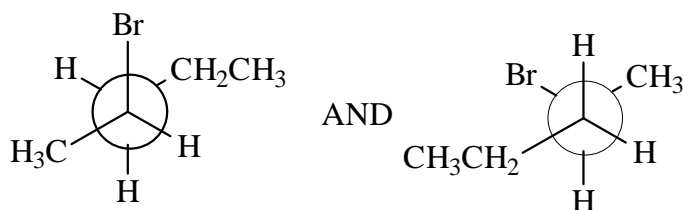


4. Pick the word (positional isomer, configuration, conformation, identical, none of these) which correctly describes the relationship between each of the following pairs of compounds. [5 points each]

(a)

cis 1,3-dimethylcyclohexane AND *trans* 1,3-dimethylcyclohexane

(b)

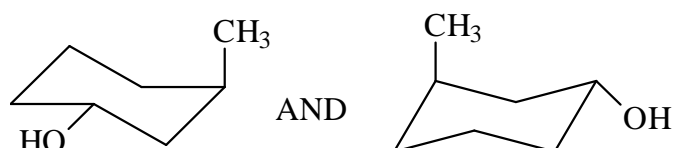


(c) a cyclohexane which has an axial chlorine on C-1, an equatorial bromine on C-2 and an axial methyl group on C-4

AND

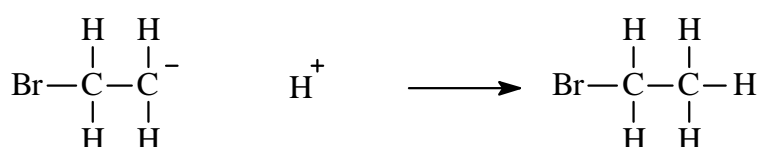
a cyclohexane which has an equatorial chlorine on C-1, an equatorial bromine on C-2 and an equatorial methyl group on C-4

(d)

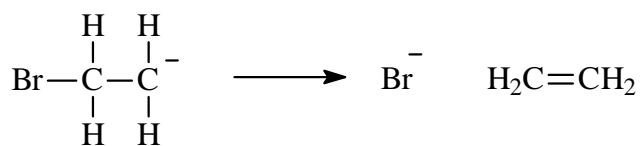


5. Draw the “curly arrow” representation for the following conversions. If charges are generated on any of the species from the reactions and are not shown, include them. [3 points each]

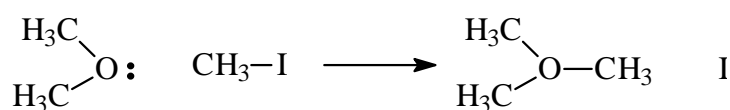
(a)



(b)



(c)



6. (a) Explain why the molecule CCl_4 is not polar in spite of the fact that each of the C-Cl bonds are polar. [4 points]

(b) Explain why Na^+ is not an effective electrophile whereas H^+ is. [4 points]