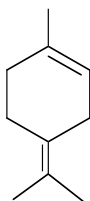


CEM143, Quiz 3

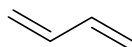
Summer 2015

NAME

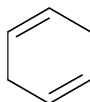
1) (2 Pts) which of the following compounds is a suitable **diene** for a Diels Alder reaction?



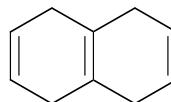
A



B

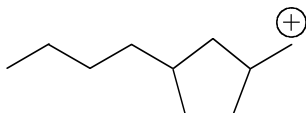


C



D

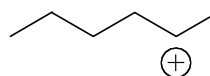
2) (2 Pts) Identify the most stable carbocations among the following structures:



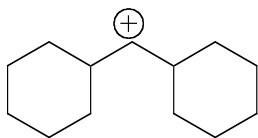
A



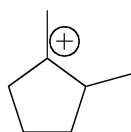
B



C

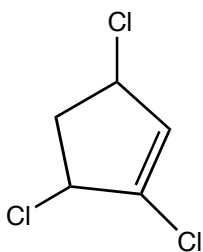


D



E

3) (2 Pts) Which of the following is the correct IUPAC name for **compound A**?



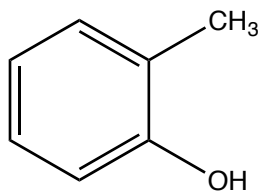
Compound A

- A) 1,3,5-trichlorocyclopentene
- B) 1,3,4-trichlorocycloheptene
- C) 1,2,4-trichlorocycloheptene
- D) 1,2,3-trichlorocycloheptene

4) (2 Pts) The correct molecular formula for 1-methyl-1-phenylcyclohexane is:

- A) $C_{13}H_{18}$ B) $C_{12}H_{16}$ C) $C_{13}H_{26}$ D) $C_{12}H_{26}$ E) $C_{12}H_{18}$ F) $C_{13}H_{20}$

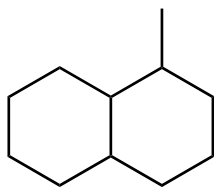
5) (2 Pts) Which of the following is the correct name for **compound B**?



Compound B

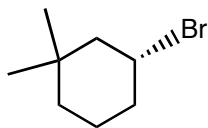
- A) o-nitrotoluene
B) o-methylphenol
C) m-methylphenol
D) p-methylphenol
E) Toluene

6. (2 Pts) How many stereoisomers are there for **compound A**?



- A) 3 B) 4 C) 6 D) 8 E) 12 F) 14 G) 16

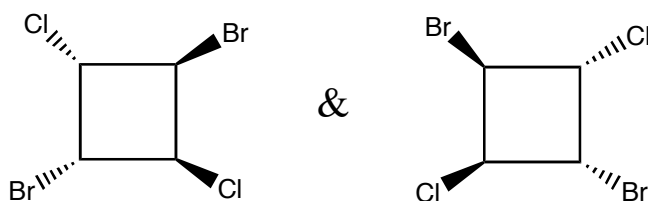
7. (2 Pts) Which of the following IUPAC names below is the correct one for **compound B**?



Compound B

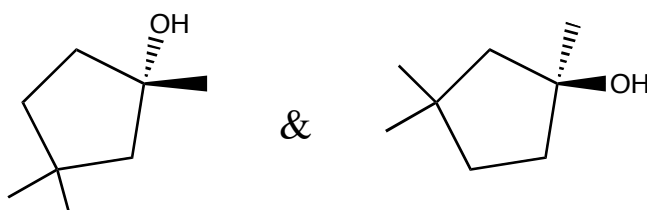
- A) (R)-3-bromo-1,1-dimethylcyclohexane
B) (S)-3-bromo-1,1-dimethylcyclohexane
C) (R)-1-bromo-3,3-dimethylcyclohexane
D) (S)-1-bromo-3,3-dimethylcyclohexane

8. (2 Pts) What is the relationship of the following two molecules?



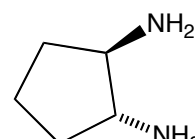
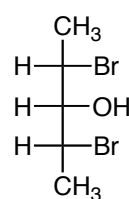
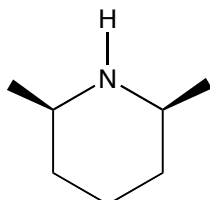
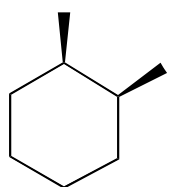
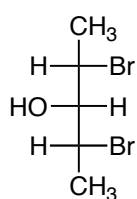
- A) Enantiomers
- B) Diastereomers
- C) constitutional isomers
- D) They are identical (the same molecule)

9. (2 Pts) What is the relationship of the following two molecules?



- A) Enantiomers
- B) Diastereomers
- C) constitutional isomers
- D) They are identical (the same molecule)

10. (2 Pts) Which of the following compounds is chiral?



11. (5pts) Provide an efficient synthesis of **Compound F** starting with benzene and any other necessary reagents.

