Name: KEY

Chapter 3: Naming Review

Organic Chemistry

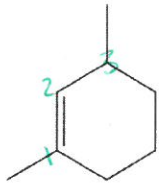
Draw/Name the following molecules using IUPAC guidelines.

1. $CH_3CH{=}C(CH_2CH_3)_2$

3-ethyl-2-pentene

2. $CH_3CH_2CH{=}\overset{2}{C}H\overset{1}{C}H_3$

2-pentene

3. 

1,3-dimethyl-1-cyclohexene

4. $CH_3CH_2C{\equiv}CCH_2CH_3$

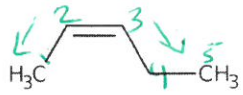
3-hexyne

5. $\overset{4}{C}H_2{=}\overset{3}{C}H{-}\overset{2}{C}Br{=}\overset{1}{C}H_2$

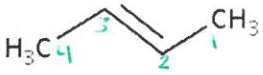
2-bromo-1,3-butadiene

6. $H{-}\overset{5}{C}{\equiv}\overset{4}{C}\overset{3}{C}H_2\overset{2}{C}H{=}\overset{1}{C}H_2$

pent-1-ene-4-yne

7. 

cis-2-pentene

8. 

2-butene

9. 1-hexene

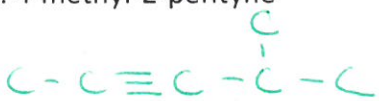
C=C-C-C-C-C

10. 1-cyclobutene

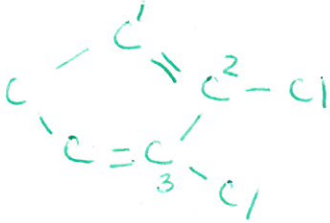
11. 1,3-dichloro-2-butene

12. 1,3-cyclohexadiene

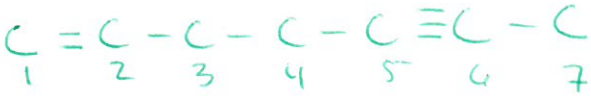
13. 4-methyl-2-pentyne



14. 2,3-dichloro-1,3-cyclopentadiene



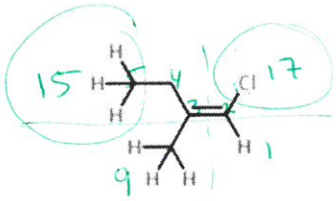
15. hept-1-ene-5-yne



16. Decide whether each molecule found below can exist as cis-trans isomers. If cis-trans isomerism is possible, draw the structure showing both cis and trans forms.

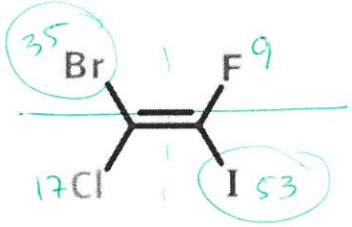
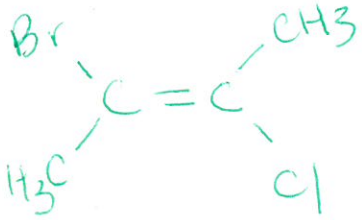
Name	Is Cis/Trans Possible	Cis Drawing	Trans Drawing
2-pentene C-C=C-C-C	yes		
1-hexene H H C=C-C-C-C-C	no		
1-chloropropene Cl C=C-C	yes	Cl	Cl
3-bromopropene H H C=C-C Br	no		
1,3,5-hexatriene C=C-C=C-C=C	yes if #3 is used		
1,2-dichlorocyclodecane	yes	Cl Cl	Cl Cl

17. Name the following molecules using E-Z nomenclature.



Z-1-chloro-3-methyl-2-pentene

E-1-bromo-1-chloro-2-fluoro-2-iodo-1-ethene



18. Draw E-2-bromo-3-chloro-2,3-dimethyl 2-butene.