Hydrocarbons

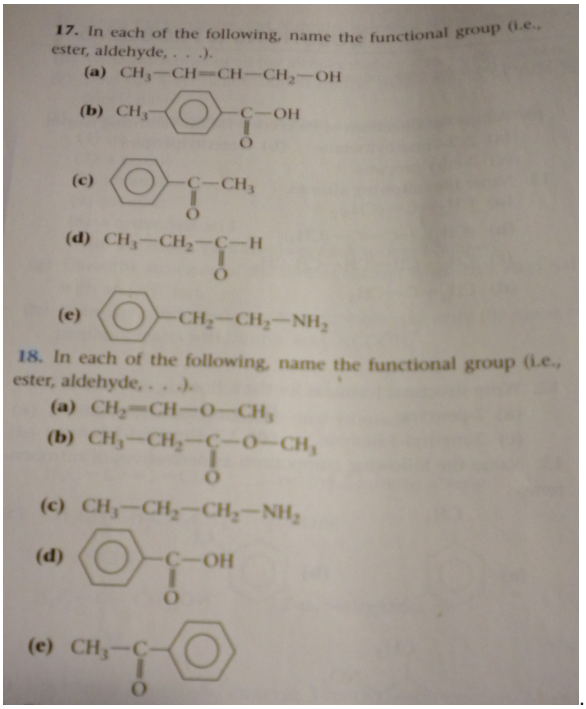
3. Write the formula for
   (a) an alkene with two carbon atoms.
   (b) an alkane with 22 hydrogen atoms.
   (c) an alkyne with three carbon atoms.

8. Write structural formulas for the following alkanes.
   (a) 2,2,4- trimethylpentane
   (b) 2,2- dimethylbutane

11. Name the following alkenes.
   (c) CH_3-CH=CH-CH_2CH_3
   (d) CH_3-C=CH_2
   |
   CH_2
   |
   CH_3

12. Write the structural formulas for the following alkynes.
   (a) 2-pentyne
   (b) 4-methyl-2-pentyne

Functional Groups



21. Write the structural formula of the ester formed by methyl alcohol with
   (a) formic acid
   (b) acetic acid

Isomerism

29. Draw the structural isomers of the alkane C_6H_{14}.

30. Draw the structural isomers of the alkene C_4H_8.

31. Draw the structural isomers of C_4H_9Cl in which one hydrogen atom of a C_4H_{10} molecule has been replaced by chlorine.

43. Which of the following can show optical isomerism?
   (a) 2-bromo-2-chlorobutane
   (b) 2-methylpropane
   (c) 2,2-dimethyl-1-butanol
   (d) 2,2,4-trimethylpentane

Types of Reactions

49. Name the products formed when the following reagents add to 1-butene.
   (a) H_2
   (b) Br_2

50. Name the products obtained when the following reagents add to 2-methyl-2-butene. (**The Molecular Formula**)
   (a) Cl_2
   (b) I_2