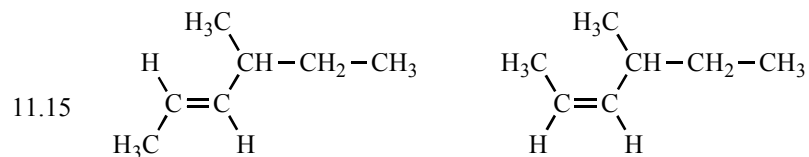
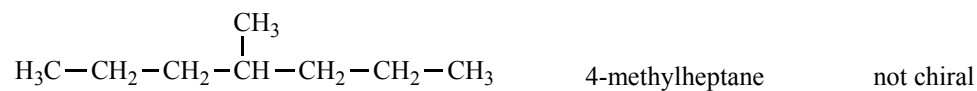
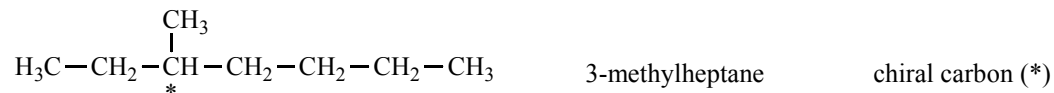
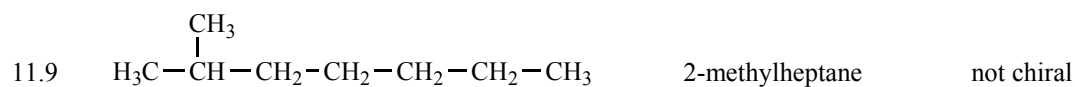
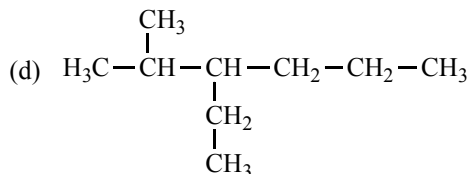
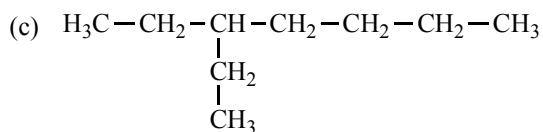
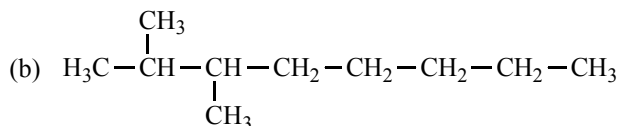
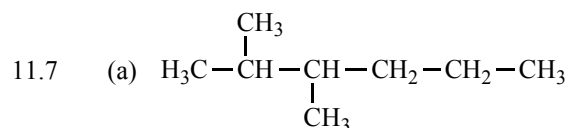
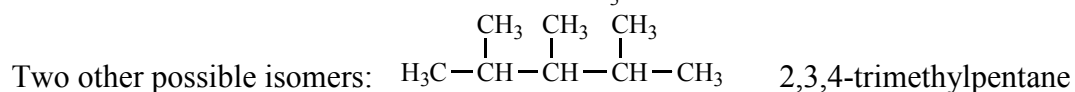


AP Chemistry Chapter 11 Answers - Kotz

Text Problems: 3, 4, 7, 9, 15, 20, 24, 26, 27, 31, 33, 37, 41, 49, 53

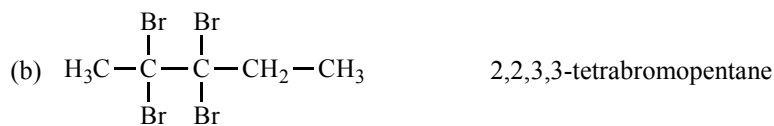
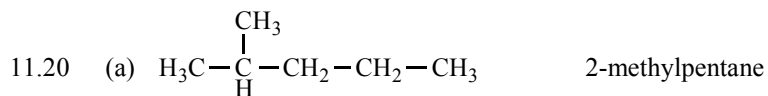
11.3 (c) $C_{14}H_{30}$ is an alkane

(b) C_5H_{10} could be a cycloalkane



trans-4-methyl-2-hexene

cis-4-methyl-2-hexene

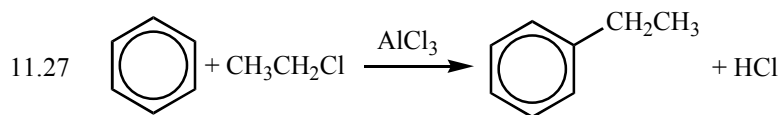


11.24 If the compound is an alkene it will react with bromine to form a substituted alkane. The alkane would not react with bromine.

11.26 (a) 1-chloro-2-nitrobenzene (or *o*-chloronitrobenzene)

(b) 1,4-dinitrobenzene (or *p*-dinitrobenzene)

(c) 1-chloro-2-ethylbenzene (or *o*-chloroethylbenzene)

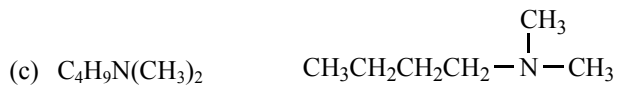
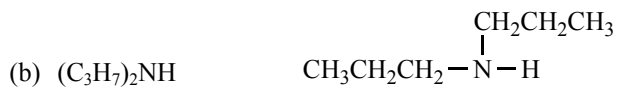


11.31 (a) 1-propanol primary

(b) 1-butanol primary

(c) 2-methyl-2-propanol tertiary

(d) 2-methyl-2-butanol tertiary



11.37 (a) $\text{C}_6\text{H}_5\text{NH}_3^+(\text{aq}) + \text{Cl}^-(\text{aq})$

(b) $(\text{CH}_3)_3\text{NH}^+(\text{aq}) + \text{HSO}_4^-(\text{aq})$

11.41 (a) 3-methylpentanoic acid; carboxylic acid

(b) methyl propanoate; ester

(c) butyl acetate, ester

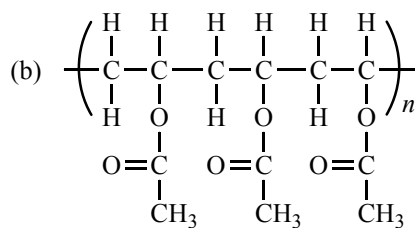
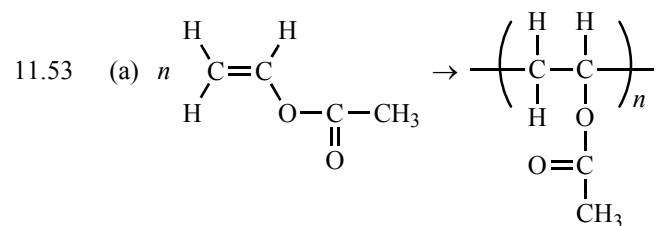
(d) *p*-bromobenzoic acid; carboxylic acid

11.49 (a) trigonal planar

(b) 120°

(c) The molecule is chiral, carbon 2 is the chiral carbon atom

(d) The —O—H hydrogen atom is acidic



(c) Polyvinyl alcohol is made by hydrolyzing the ester groups in polyvinyl acetate.