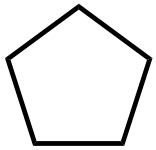
CHEM 1050 Homework
Exam #6 Assignment-Solutions
Alan D. Earhart

11.1 Organic ones are b, c, and f.

11.4 b and c are typical organic properties.

11.7 a. pentane b. ethane c. hexane d. cycloheptane

11.10 a. CH_3-CH_2-CH_3 b. CH_3-CH_2-CH_2-CH_2-CH_2-CH_3
c. CH_3-CH_2-CH_2-CH_2-CH_2-CH_2-CH_3

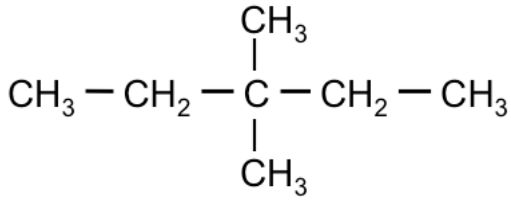
d.  (I'll just draw the line-angle since it's easier for cyclic compounds)

11.12 Remember what we did in lecture and in lab. To be isomers they have to have the same molecular formula and a different arrangement of atoms.

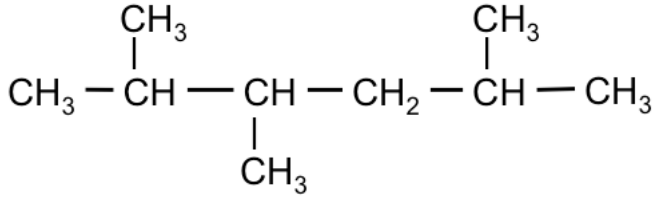
a. isomers b. isomers c. same molecule

11.13 a. 2,2-dimethylpropane b. 2,3-dimethylpentane
c. 4-ethyl-2, 2-dimethylhexane d. methylcyclobutane

11.15 a.



b.



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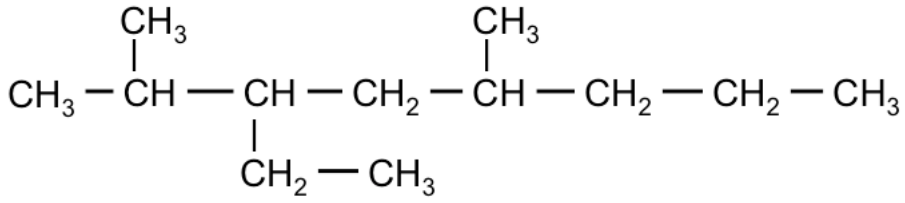
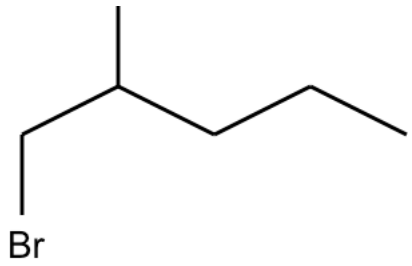
11.15 c.

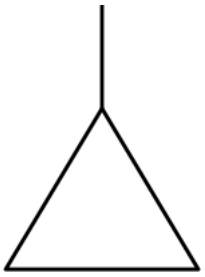


d. CH_2Cl-CH_2Br

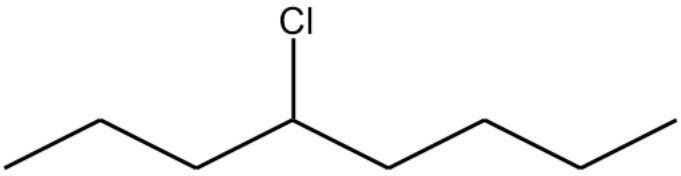
11.18 a.



b.



d.



11.22 a. $2C_6H_{14} + 19O_2 \rightarrow 12CO_2 + 14H_2O + \text{energy}$

b. $2C_5H_{10} + 15O_2 \rightarrow 10CO_2 + 10H_2O + \text{energy}$

c. $C_5H_{12} + 8O_2 \rightarrow 5CO_2 + 6H_2O + \text{energy}$

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11.24 a. cycloalkane b. alkyne c. alkene d. alkyne

11.27 See scan at the end of this file.

11.29 a. cis-2-butene b. trans-3-octene c. cis-3-heptene

11.32 See scan at the end of this file.

11.34 See can at the end of this file.

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12.2 We won't do substituent groups on alcohols.
b. 2-methyl-1-butanol
c. 2, 3-dimethyl-1-pentanol
d. 3-hexanol

12.3 See scan at the end of this file.

12.10 a. secondary b. primary d. tertiary

12.12 a. soluble b. insoluble

12.18 We won't do substituent groups on aldehydes or ketones.
a. 3-methyl-pentanal
b. 2-pentanone

12.21 a. The one with two ketones in it should be more soluble in water. The additional ketone group adds an oxygen which makes the molecule more polar.
b. acetone (ethanone) since the shorter carbon chain combined with the oxygen group makes it more polar.
c. Propanal for the same reason as in part b.

12.22 a. The aldehyde since alkanes are insoluble and the aldehyde has an oxygen which makes it more polar.
b. propanone since the shorter the carbon chain the more polar the molecule which means it's more soluble in water.
c. Butanal is more soluble in water because it has a shorter carbon chain.

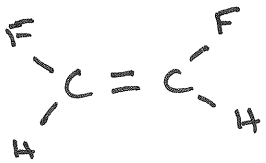
11.27 a. 

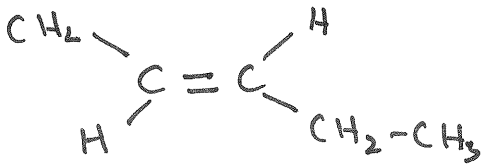
b. $CH_2=C(CH_3)-CH_2-CH_3$

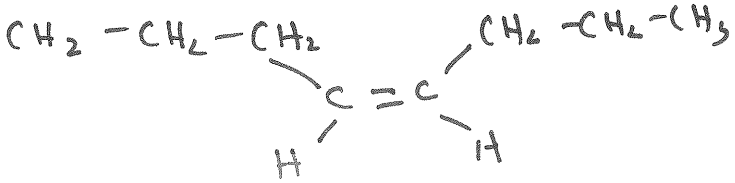
c. 

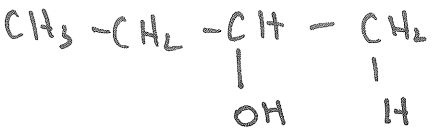
d. $CH_2(Cl)-CH_2-CH=CH-CH_2-CH_3$

11.32

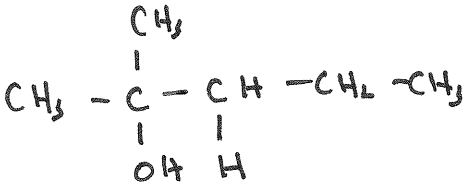
a. 

b. 

c. 

11.34 a. 

b. 

c. 

12.3 b.