CHM 2210 Name: _____
CH 3 HW

I. Write the following definitions/structures

a. Alkanes

b. Functional groups

c. Alkenes

d. Alkynes

e. Arenes

f. Alcohol

g. Ether

h. Ester

i. Carboxylic acid

j. Ketone

k. Aldehyde

l. Amine

m. Amide

n. Acid halide

o. Alkyl halide

p. Nitrile

q. Thiol

r. Sulfide

s. Saturated

t. Straight chain alkanes

u. Branched alkanes

v. Isomers

w. Constitutional isomers

x. Alkyl group
    i. Primary

    ii. Secondary

    iii. Tertiary

    iv. Quaternary

y. Common names
    i. Isopropyl

    ii. T-butyl

iii. Sec-butyl

iv. Isobutyl

z. Conformation
   i. Ethane
      1. Eclipsed

      2. Staggered

      3. Skew

   ii. Butane
      1. Totally eclipsed

      2. Gauche

      3. Eclipsed

      4. Anti

   iii. Strain
      1. Torsional

      2. Steric

II. Which of the following has the highest boiling point?

a. Propane or Hexane

b. Hexane or 2-Methylpentane

c. 2,2,3,3-Tetramethylbutane or Octane

d. 3,3-Diemthylhexane or 3-Methylheptane

e. Octane or Decane

III. Which of the following has the highest melting point?

a. Propane or Hexane

b. Hexane or 2-Methylpentane

c. 2,2,3,3-Tetramethylbutane or Octane

d. 3,3-Diemthylhexane or 3-Methylheptane

e. Octane or Decane

IV. Which conformer of ethane is the most stable? Why?

V. Which conformer of ethane is the least stable? Why?

VI. Which conformer of butane is the most stable? Why?

VII. Which conformer of butane is the least stable? Why?

VIII. Draw the following

a. 2,2-Dimethylpropane

b. 2,8-Dimethyl-4-(1-methylethyl)-5-(1-methylpropyl)nonane

c. 2-Methyl-3-ethylpentane

d. 4-Isopropyl-3,5,5-trimethylheptane

e. 4-Ethyl-2,3-dimethylhexane

f. 4-t-Butyl-5-ethyl-3-methyloctane

g. 4-(1,1-dimethylethyl)-3,5-diethyloctane

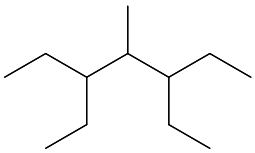
h. 5,6-Diisopropyl-4-ethyl-7-methyldecane

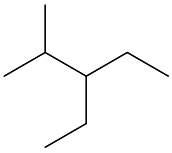
i. 5-sec-Butyl-4-isopropyl-2,8-dimethylnonane

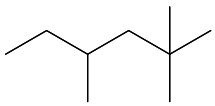
j. 2,8-Dimethyl-4-(1-methylethyl)-5-(1-methylpropyl)nonane

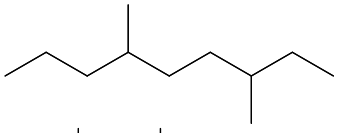
k. 3,3-Diethyl-2,4-dimethylpentane

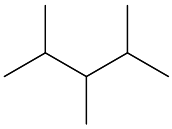
IX. Name the following

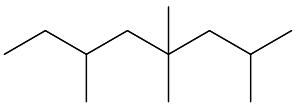
a. 

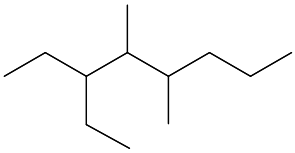
b. 

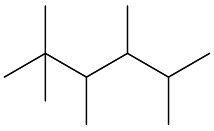
c. 

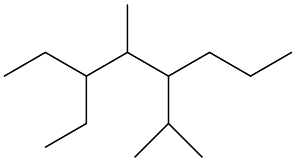
d. 

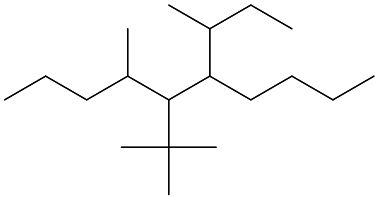
e. 

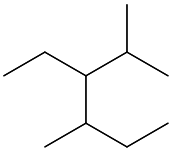
f. 

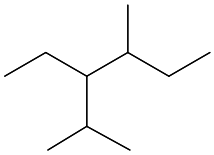
g. 

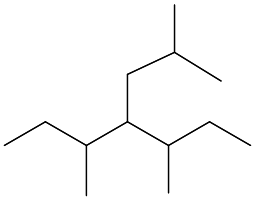
H. 

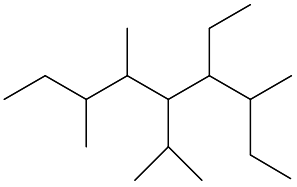
I. 

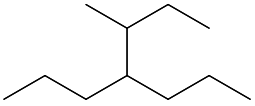
J. 

K. 

L. 

M. 

N. 

O. 

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