

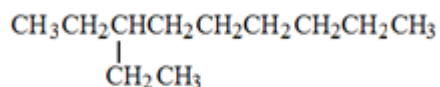
Organic Compounds Review and Practice

Name: _____

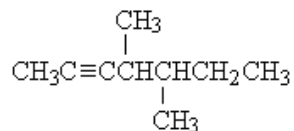
Period: _____

(1) Name the following hydrocarbons

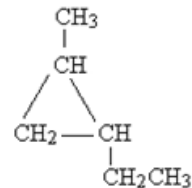
(a)



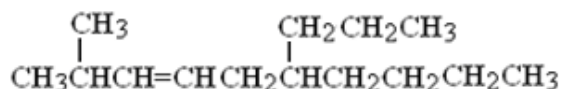
(b)



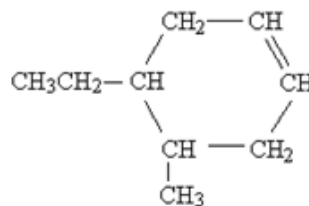
(c)



(d) _____



(e) _____

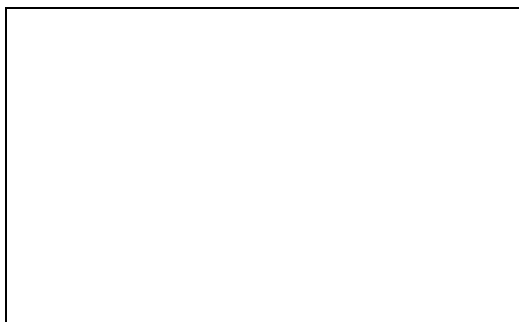


(2) Draw the following hydrocarbons.

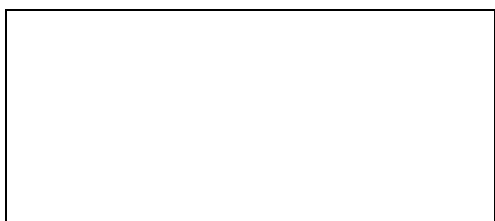
(a) 2-methylbutane



(d) 1,3-diethylcyclopentane



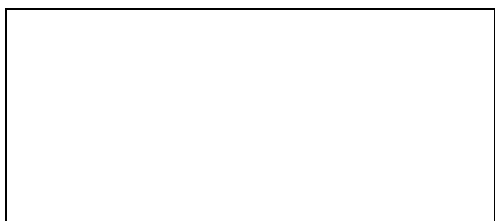
(b) 2,4-dimethyl-3-nonene



(e) 3-propylcyclobutene



(c) 3-ethyl-6-methyl-1-heptyne

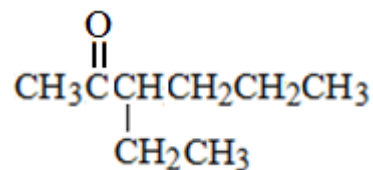
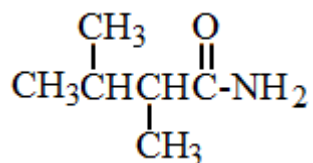
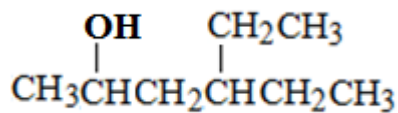


(3) Classify the functional group of each of the organic compounds and match them with the correct name.

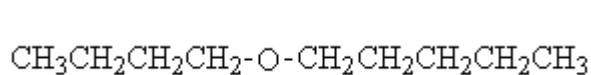
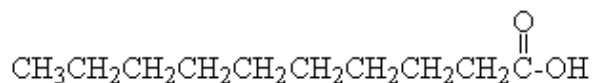
_____ (a) # _____	_____ (e) # _____	(1) 5-methyl-2-hexanone
$\text{CH}_3\text{-O-CH}_2\text{CH}_3$	$\begin{array}{c} \text{CH}_3\text{CHCH}_3 \\ \\ \text{NH}_2 \end{array}$	(2) methyl ethanoate
_____ (b) # _____	_____ (f) # _____	(3) 3-methylpentanoic acid
$\begin{array}{c} \text{O} \\ \\ \text{CH}_3\text{CH}_2\text{CHCH}_2\text{C-H} \\ \\ \text{CH}_3 \end{array}$	$\begin{array}{c} \text{O} \\ \\ \text{CH}_3\text{C-O-CH}_3 \end{array}$	(4) 3-methylpentanal
_____ (c) # _____	_____ (g) # _____	(5) 2-aminopropane
$\begin{array}{c} \text{O} \quad \quad \text{CH}_3 \\ \quad \quad \\ \text{CH}_3\text{CCH}_2\text{CH}_2\text{CHCH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \quad \text{O} \\ \quad \quad \\ \text{CH}_3\text{CH}_2\text{CHCH}_2\text{C-OH} \end{array}$	(6) ethyl methyl ether
_____ (d) # _____	_____ (h) # _____	(7) 5-methyl-2-hexanol
$\begin{array}{c} \text{O} \\ \\ \text{CH}_3\text{CHC-NH}_2 \\ \\ \text{CH}_3 \end{array}$	$\begin{array}{c} \text{OH} \quad \quad \text{CH}_3 \\ \quad \quad \\ \text{CH}_3\text{CHCH}_2\text{CH}_2\text{CHCH}_3 \end{array}$	(8) 2-methylpropanamide

(4) Name the following organic compounds.

(a) _____ (b) _____ (c) _____

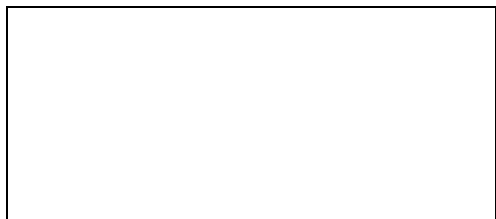


(d) _____ (e) _____

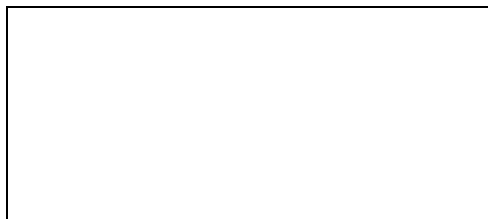


(5) Draw the following organic compounds.

(a) propyl hexanoate



(d) 3-iodo-1-propyne



(b) 5-chloropentanal



(e) 1-aminoethane



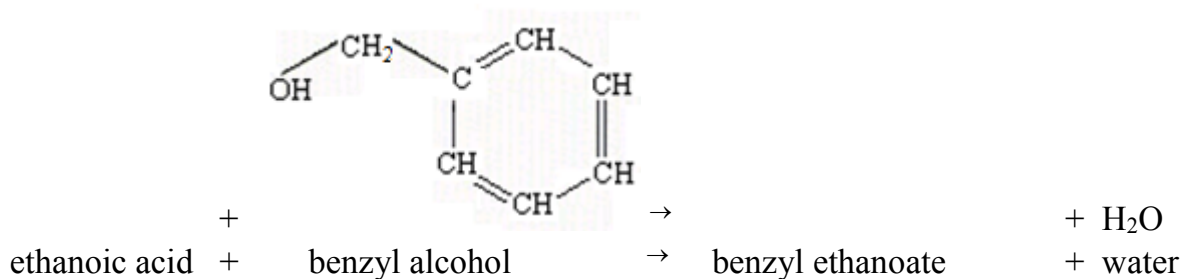
(c) 3-methylhexanoic acid



(f) 1-bromo-2-fluorobenzene



(6) Ethanoic acid can be reacted with benzyl alcohol to produce the ester benzyl ethanoate which has a peach fragrance. Complete the ester synthesis reaction.



(7) (a) (i) Draw the molecule 2-propanone.

(ii) What is the chemical formula for 2-propanone?

(b) (i) Draw the molecule propanal.

(ii) What is the chemical formula for propanal?

(c) Compare the chemical formula for 2-propanone and propanal. How are these molecules related to each other?

Answers:

(1) (a) 3-ethylnonane

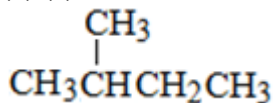
(b) 4,5-dimethyl-2-heptyne

(c) 1-ethyl-2-methylcyclopropane

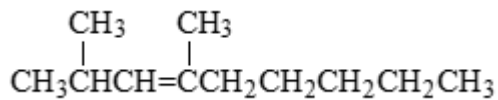
(d) 2-methyl-6-propyl-3-decene

(e) 4-ethyl-5-methylcyclohexene

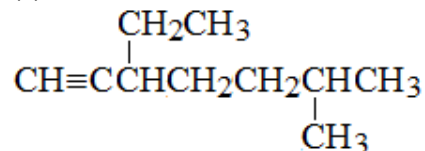
(2) (a)



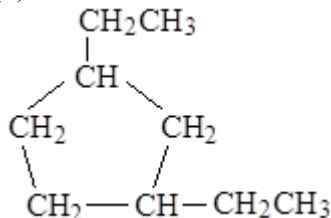
(b)



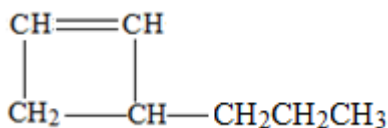
(c)



(d)



(e)



(3) (a) ether, #6

(b) aldehyde, #4

(c) ketone, #1

(d) amide, #8

(e) amine, #5

(f) ester, #2

(g) carboxylic acid, #3

(h) alcohol, #7

(4) (a) 4-ethyl-2-hexanol

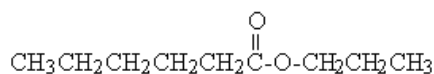
(b) 2, 3-dimethylbutanamide

(c) 3-ethyl-2-hexanone

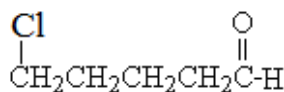
(d) decanoic acid

(e) butyl pentyl ether

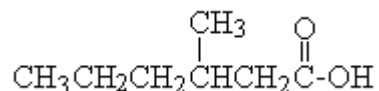
(5) (a)



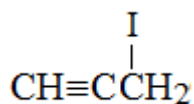
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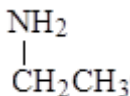
(c)



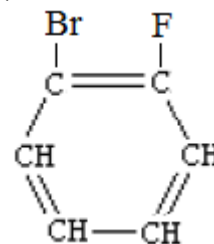
(d)



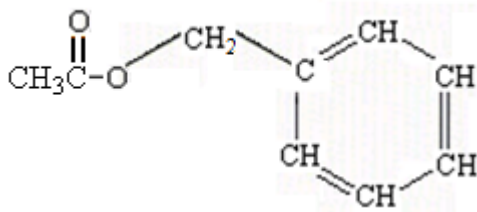
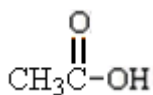
(e)



(f)



(6)

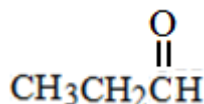
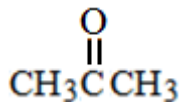


(7) (a) (i)

(ii) C₃H₆O

(b) (i)

(ii) C₃H₆O

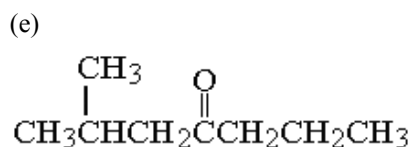
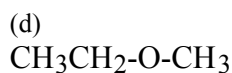
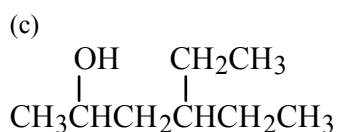
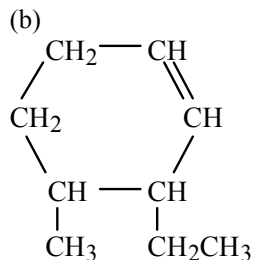
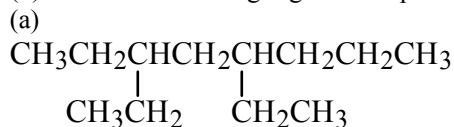


(c) The chemical formula for 2-propanone is the same as for propanal. Therefore, the molecules are structural isomers.

Review: Organic Chemistry

Name: _____
 Period: _____

(1) Name the following organic compounds.



(2) Draw the following organic compounds.

(a) 2,4-Dimethylheptane

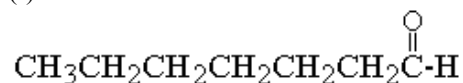
(b) 4-Chloro-2-pentene

(c) 3,4-Dimethyl-2-pentanol

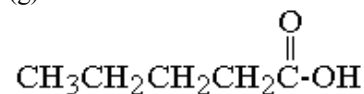
(d) 3-Ethylcyclopentene

(e) 3-Methylhexanal

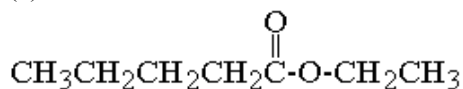
(f)



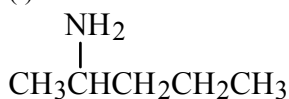
(g)



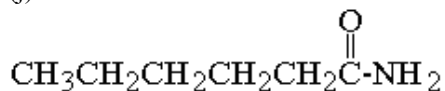
(h)



(i)



(j)



(f) 1-Aminobutane

(g) Ethyl heptanoate

(h) 3,5 Dimethyl-2-octanone

(i) Nonanoic acid

(j) Pentanamide

(3) Name and draw the five **structural isomers** of C₆H₁₄.

(4) Name and draw the two **stereoisomers** of 2-heptene.

(5) Complete the following condensation reaction.



Answers:

- (1) (a) 3,5-Diethyloctane
 (b) 3-Ethyl-4-methylcyclohexene
 (c) 4-Ethyl-2-hexanol
 (d) Ethyl methyl ether
 (e) 2-Methyl-4-heptanone
 (f) Heptanal
 (g) Pentanoic acid
 (h) Ethyl pentanoate
 (i) 2-Aminopentane
 (j) Hexanamide

