

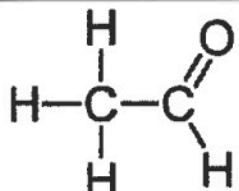
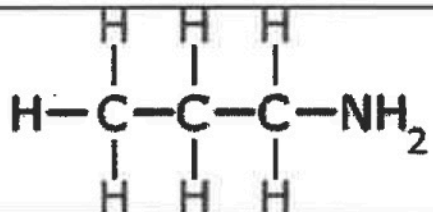
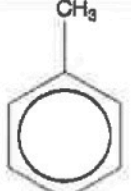
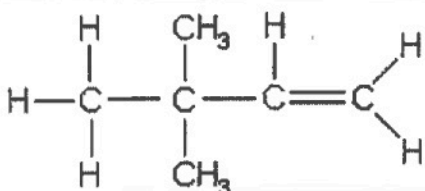
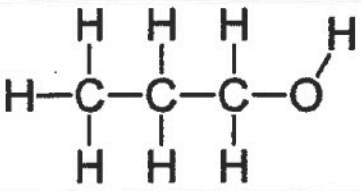
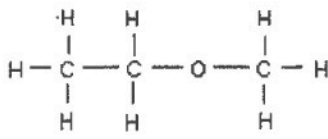
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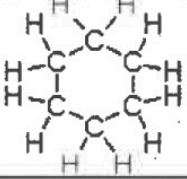
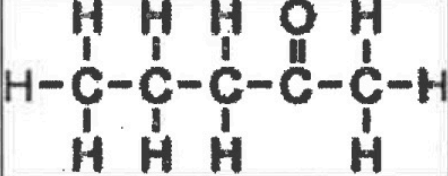
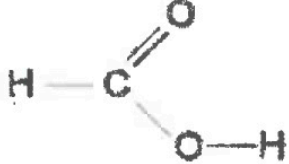
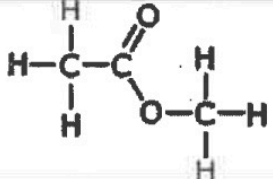
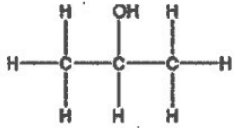
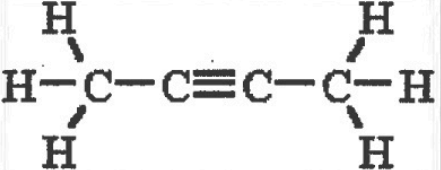
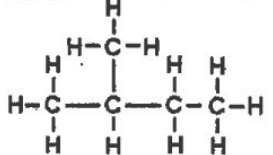
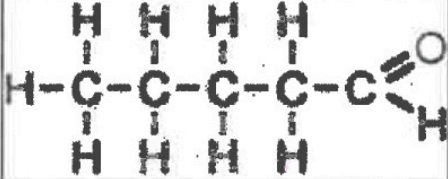
Name: _____


Date: _____

ORGANIC CHEMISTRY - FUNCTIONAL GROUPS

A. Classify the following organic substances and then name them.

Structure	Functional Group	Name
	aldehyde	ethanal
	amine	1-Amino propane OR propylamine
	aromatic	methylbenzene
	alkene	3,3-dimethyl- 1-butene
	alcohol	1-propanol
	ether	methoxyethane

	cycloalkane	cyclohexane
	ketone	2-pentanone
	carboxylic acid	methanoic acid
	ester	methyl ethanoate
	alcohol	2-propanol
	alkyne	2-butyne
	alkane	2-methylbutane
	aldehyde	pentanal

$ \begin{array}{ccccccccc} & \text{H} & & \text{H} & & \text{H} & & \text{H} & & \text{H} \\ & & & & & & & & & \\ \text{H} & - \text{C} & - & \text{C} & - & \text{C} & - & \text{C} & - & \text{C} & - & \text{H} \\ & & & & & & & & & \\ & \text{H} & & \text{H} & & \text{CH}_3 & & \text{H} & & \text{H} \end{array} $	alkane	3-methylpentane
$ \begin{array}{ccccccccc} & \text{H} & & \text{H} & & \text{H} & & \text{H} \\ & & & & & & & \\ \text{H} & - \text{C} & - & \text{C} & = & \text{C} & - & \text{C} & - & \text{H} \\ & & & & & & & \\ & \text{H} & & & & & & \text{H} \end{array} $	alkene	2-butene
$ \begin{array}{c} \text{H} \\ \\ \text{H} - \text{C} - \text{Cl} \\ \\ \text{H} \end{array} $	alkyl halide	chloromethane
$ \begin{array}{c} \text{O} \\ \\ \text{CH}_3 - \text{C} - \text{CH}_2 - \text{CH}_3 \end{array} $	ketone	2-butanone
	cycloalkane	1,4-dimethylcycloheptane
$ \begin{array}{ccccccccccc} \text{H} & \text{H} & \text{H} & \text{H} & & \text{H} & \text{H} \\ & & & & & & \\ \text{H} - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{O} & - \text{C} & - \text{C} & - \text{H} \\ & & & & & & \\ \text{H} & \text{H} & \text{H} & \text{H} & & \text{H} & \text{H} \end{array} $	ether	ethoxybutane
$ \begin{array}{ccccccccccc} & & & \text{CH}_3 & & & & & & & & \\ & & & & & & & & & & & \\ \text{CH}_3 & - \text{CH}_2 & - \text{CH} & - \text{CH} & - \text{CH}_2 & - \text{CH}_2 & - \text{CH}_3 \\ & & & & & & & & & & & \\ & & & \text{CH}_2 - \text{CH}_3 & & & & & & & & \end{array} $	alkane	4-ethyl-3-methylheptane
$ \begin{array}{ccccccc} & \text{H} & & \text{O} & & \text{H} & \text{H} & \text{H} \\ & & & & & & & \\ \text{H} & - \text{C} & - & \text{C} & - & \text{O} & - \text{C} & - \text{C} & - & \text{C} & - & \text{H} \\ & & & & & & & & & \\ & \text{H} & & & & & \text{H} & \text{H} & & \text{H} \end{array} $	ester	propylethanoate

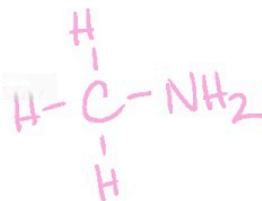
B. Draw structural formulas for the following.

Name	Structure
propane	$ \begin{array}{ccccccc} & & \text{H} & & \text{H} & & \text{H} \\ & & & & & & \\ \text{H} & - & \text{C} & - & \text{C} & - & \text{C} & - & \text{H} \\ & & & & & & \\ & & \text{H} & & \text{H} & & \text{H} \end{array} $
2-methylpropane	$ \begin{array}{ccccccc} & & \text{H} & & \text{CH}_3 & & \text{H} \\ & & & & & & \\ \text{H} & - & \text{C} & - & \text{C} & - & \text{C} & - & \text{H} \\ & & & & & & \\ & & \text{H} & & \text{H} & & \text{H} \end{array} $
propanoic acid	$ \begin{array}{ccccccc} & & \text{H} & & \text{H} & & \text{O} \\ & & & & & & // \\ \text{H} & - & \text{C} & - & \text{C} & - & \text{C} \\ & & & & & & \backslash \\ & & \text{H} & & \text{H} & & \text{OH} \end{array} $
methoxypropane	$ \begin{array}{ccccccc} & & \text{H} & & \text{H} & & \text{H} & & \text{H} \\ & & & & & & & & \\ \text{H} & - & \text{C} & - & \text{O} & - & \text{C} & - & \text{C} & - & \text{C} & - & \text{H} \\ & & & & & & & & & & \\ & & \text{H} & & & & \text{H} & & \text{H} & & \text{H} \end{array} $

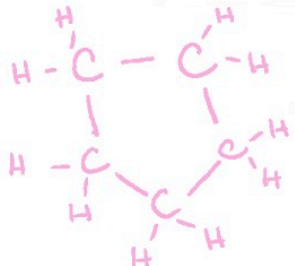
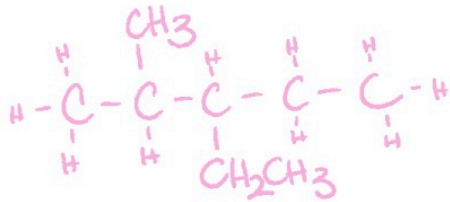
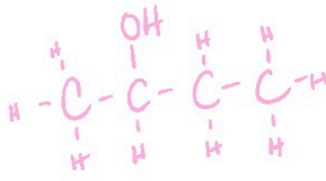
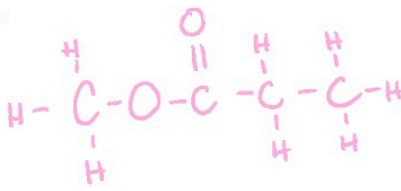
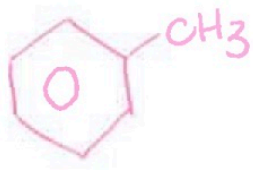
methylamine

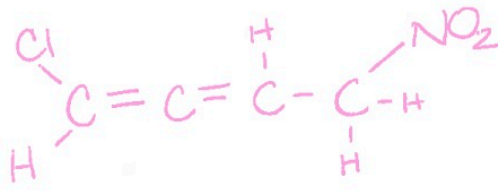
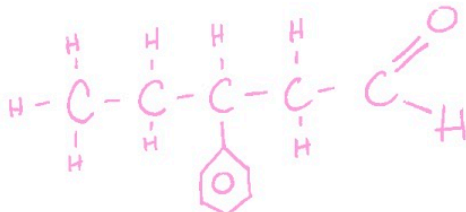
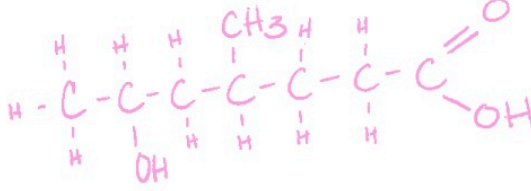
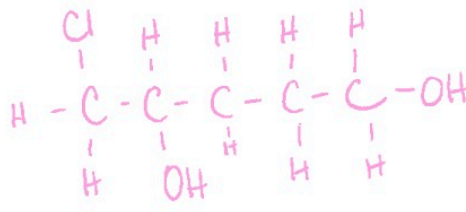
or

aminomethane



2,3-dimethylhexane	$ \begin{array}{ccccccc} & \text{H} & \text{H} & \text{CH}_3 & \text{H} & \text{H} & \text{H} \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} - \text{H} \\ & & & & & & \\ & \text{H} & \text{CH}_3 & \text{H} & \text{H} & \text{H} & \text{H} \end{array} $
butanal	$ \begin{array}{cccc} & \text{H} & \text{H} & \text{H} \\ & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} = \text{O} \\ & & & & \\ & \text{H} & \text{H} & \text{H} & \text{H} \end{array} $
ethene	$ \begin{array}{ccc} \text{H} & & \text{H} \\ & \diagdown & / \\ & \text{C} = \text{C} & \\ & / & \diagdown \\ \text{H} & & \text{H} \end{array} $
propyne	$ \begin{array}{ccc} & & \text{H} \\ & & \\ \text{H} & - \text{C} \equiv \text{C} & - \text{C} - \text{H} \\ & & \\ & & \text{H} \end{array} $
2-methylpropene	$ \begin{array}{ccc} & & \text{CH}_3 \\ & & \\ \text{H} & - \text{C} = \text{C} & - \text{C} - \text{H} \\ & & \\ & \text{H} & \text{H} \end{array} $

<p>cyclopentane</p>	
<p>3-ethyl-2-methyl pentane</p>	
<p>2-butanol</p>	
<p>methyl propanoate</p>	
<p>methylbenzene</p>	

<p>1-chloro-4-nitro-1,2-butadiene</p>	
<p>3-phenylpentanal</p>	
<p>6-hydroxyl-4-methyl heptanoic acid</p>	
<p>1-chloro-2,5-pentadiol</p>	
<p>3-hydroxyl-1-hexyne</p>	