N t _____

ALCOHOLS , ETHERS , ALDEHYDES , and KETONES

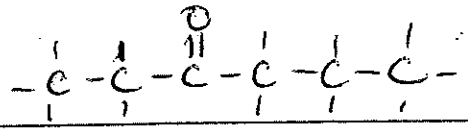
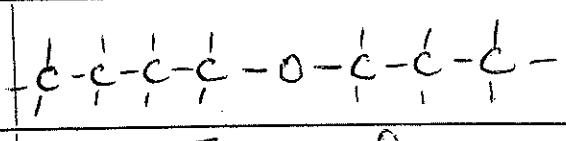
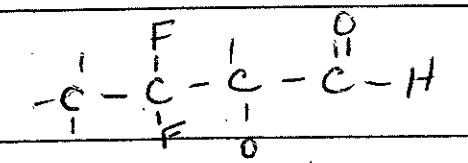
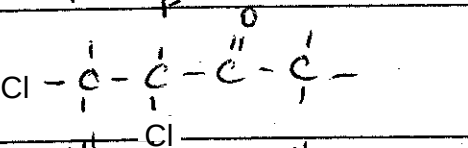
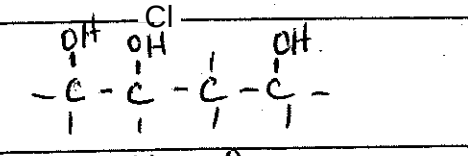
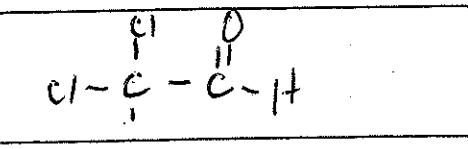
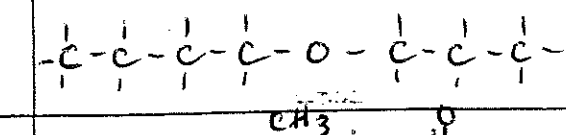
Complete <u>on your own</u> and pass in at the end of the lesson

1. *In the following structures there is one example from each of the four classes (families) of compounds.*
   a) circle the functional group
   b) determine which class the compound belongs to
   c) name the compound

	class	name
1. $CH_3-\overset{O}{\overset{\|}{C}}-CH_2-CH_3$	ketone	butanone (ethyl methyl ketone)
2. $CH_3-CH_2-CH_2-OH$	alcohol	1-propanol (propyl alcohol)
3. $CH_3-O-CH_2-CH_2-CH_3$	ether	methyl propyl ether (1-methoxypropane)
4. $CH_3-CH_2-\overset{O}{\overset{\|}{C}}-H$	aldehyde	propanal
$CH_3-\overset{O}{\overset{\|}{C}}-CH_3$	ketone	propanone (dimethyl ketone) (acetone)
6. $CH_3-\underset{OH}{CH}-OH$	alcohol (diol)	1,1-ethanediol
7. $CH_3-\overset{O}{\overset{\|}{C}}-H$	aldehyde	ethanal (acetaldehyde)
8. $CH_3-CH_2-O-CH_3$	ether	ethyl methyl ether (methoxyethane)
9. CH_3-OH	alcohol	methanol (methyl alcohol)
10. $CH_3-CH_2-CH_2-CH_2-O-CH_2-CH_3$	ether	butyl ethyl ether (1-ethoxybutan)
11. $CH_3-\underset{CH_3}{CH}-\underset{CH_3}{CH}-OH$	alcohol	3-methyl-2-butanol
$CH_3-\overset{O}{\overset{\|}{C}}-\underset{Cl}{CH}-CH_3$	ketone	3-chloro-2-butanone
13. $CH_3-(CH_2)_3-O-CH_2-CH_3$	ether	butyl ethyl ether (1-ethoxybutane)
14. $CH_3-(CH_2)_4-\overset{O}{\overset{\|}{C}}-H$	aldehyde	hexanal

15. $CH_3-\underset{CH_3}{\underset{|}{CH}}-CH-CH_2-OH$ (OH)	alcohol (diol)	3-methyl-1,2-butanediol
16. $CH_3-\underset{Br}{\underset{|}{CH}}-CH_2-\overset{O}{\overset{\|\|}{C}}-CH_3$	ketone	4-bromo-2-pentanone
17. $CH_3-(CH_2)_5-O-(CH_2)_5-CH_3$	ether	dihexyl ether (1-hexoxyhexane)
18. $CH_3-CH_2-O-CH_3$	ether	ethyl methyl ether (methoxy ethane)
19. $HO-CH_2-CH_2-CH_3$	alcohol	1-propanol (propyl alcohol)
20. $H-\overset{O}{\overset{\|\|}{C}}-CH_2-\underset{CH_3}{\underset{|}{CH}}-CH_3$	aldehyde	3-methylbutanal

2. *Determine the class of compound, draw the functional group and give the structural formulas of these compounds*

	class	functional group	structural formula
1. 3-hexanone	ketone	$-\overset{O}{\overset{\|\|}{C}}-$	
2. butylpropyl ether (1-propoxybutane)	ether	$-O-$	
3. 3,3-difluorobutanal	aldehyde	$-\overset{O}{\overset{\|\|}{C}}-H$	
4. 3,4-dichloro-2-butanone	ketone	$-\overset{O}{\overset{\|\|}{C}}-$	
5. 1,2,4-butanetriol	alcohol	$-OH$	
6. 2,2-dichloroethanal	aldehyde	$-\overset{O}{\overset{\|\|}{C}}-H$	
7. dibutyl ether (1-butoxybutane)	ether	$-O-$	
8. 3,3-dimethylpentanal	aldehyde	$-\overset{O}{\overset{\|\|}{C}}-H$