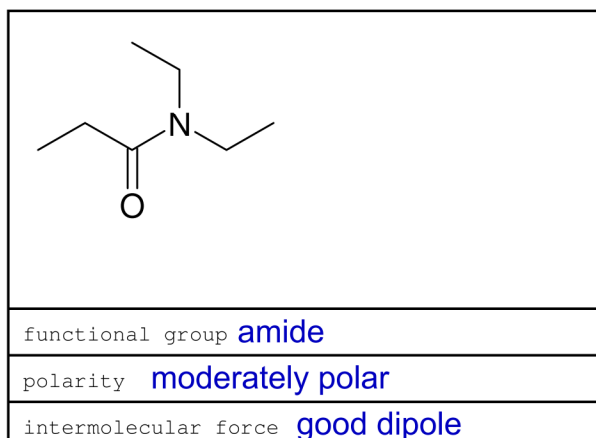
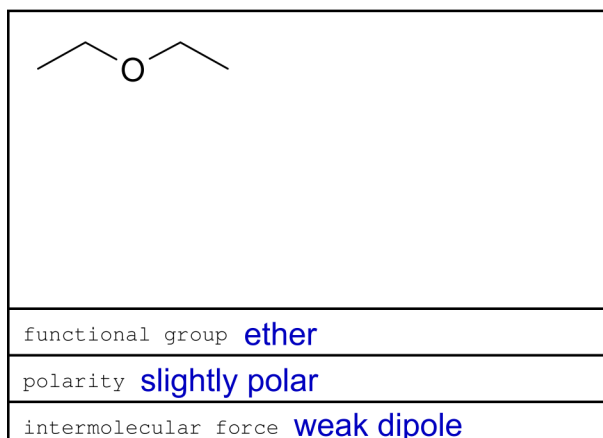
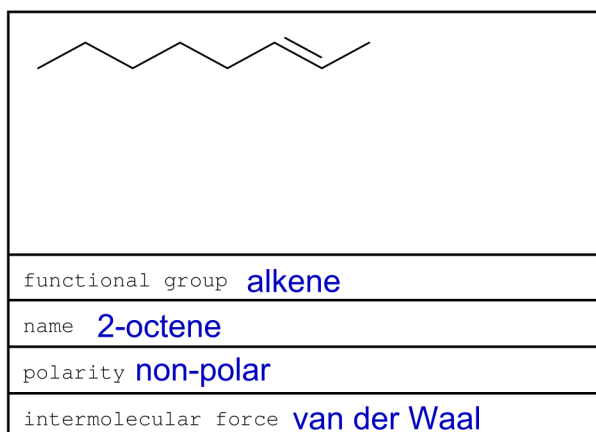
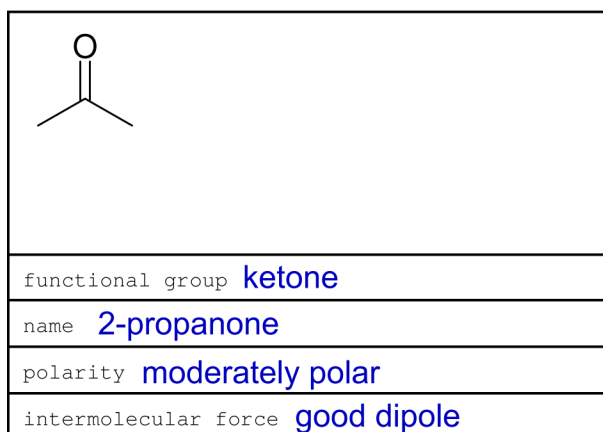
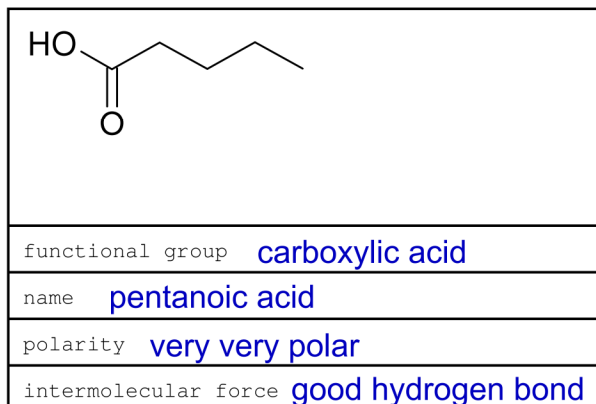
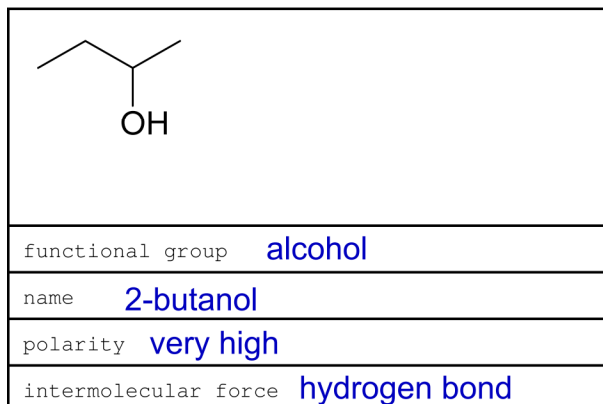
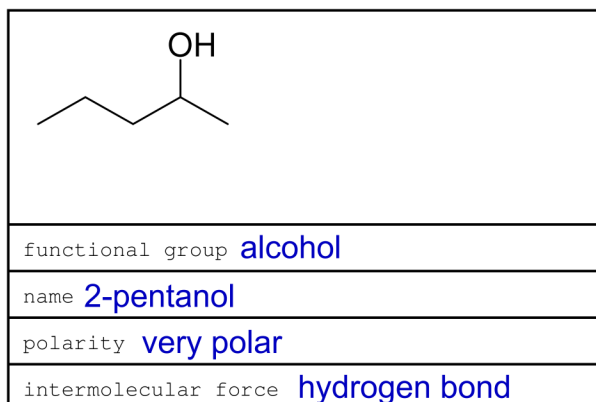
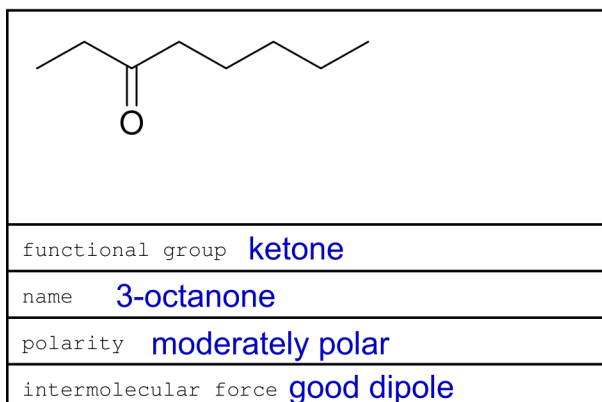
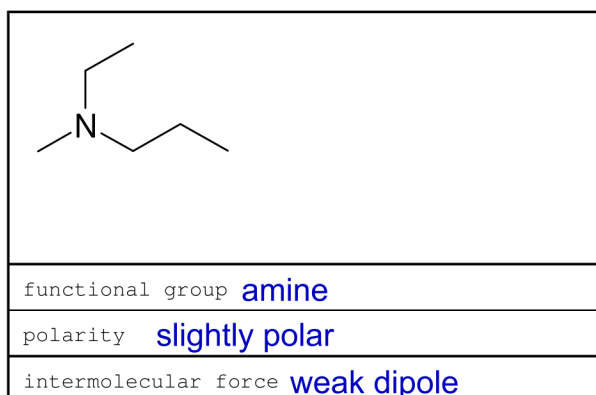
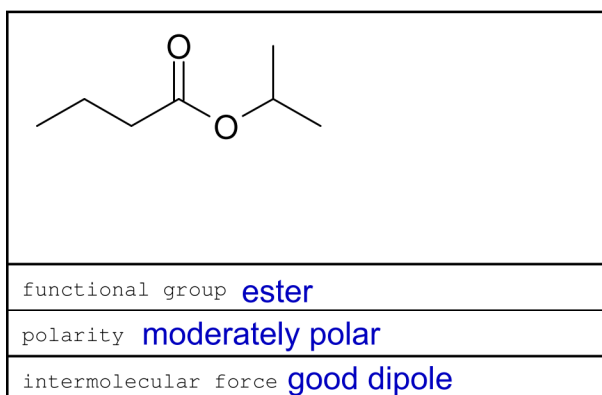
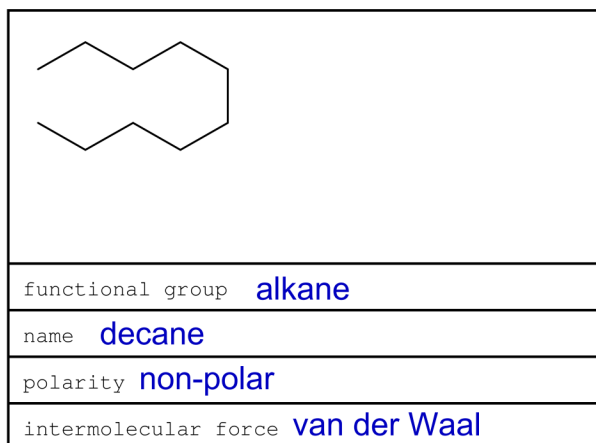
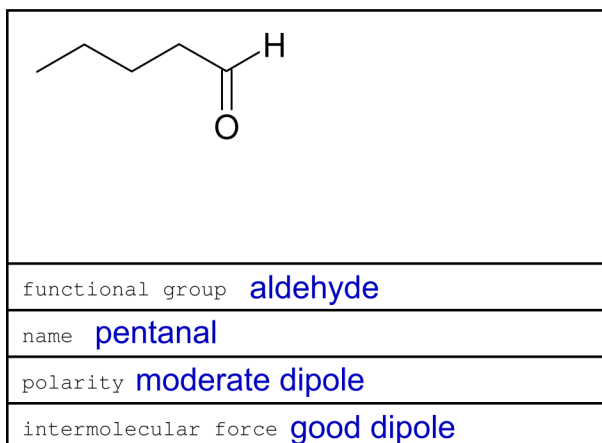


Name: _____

Organic Chemistry Test - SCH 4C

1. For each of the following structures write the name of the functional group (i.e. the family of organic compounds to which it belongs), the name of the compound where requested, comment on the level of polarity for the compound and finally state the type of intermolecular force present between molecules (choose from van der Waal, dipole or hydrogen bond). Use the information on the bottom of the next page to assist in naming.






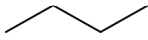
Prefix - number of carbons
relationship

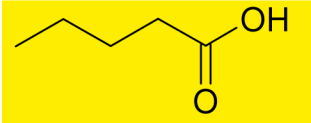
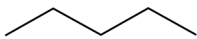
meth - 1
eth - 2
prop - 3
but - 4
pent - 5
hex - 6
hept - 7
oct - 8
non - 9
dec - 10

Suffix - functional group
relationship


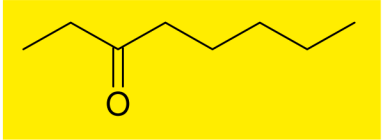
ane - alkane
ene - alkene
yne - alkyne
anol - alcohol
anal - aldehyde
anone - ketone
anoic acid - carboxylic acid

2. For each of the following pairs of compounds,
- draw a structure using either full structures, abbreviated structures (i.e. H not drawn in) or simplified stick structures
 - state the polarity of each compound
 - state the name of the primary intermolecular force of attraction
 - circle the one with the highest boiling point
 - give an explanation for the reasoning behind your choice of highest boiling point.

heptane	butane
	
polarity non-polar	polarity non-polar
intermolecular force van der Waal	intermolecular force van der Waal
<p>explanation for choice of highest boiling point</p> <p>heptane is a larger molecule, van der Waals forces increase with molecule size, therefore larger molecule has stronger intermolecular forces, therefore higher m.p. and b.p.</p>	

pentanoic acid	pentane
	
polarity very very polar	polarity non-polar
intermolecular force good hydrogen bond	intermolecular force van der Waal
<p>explanation for choice of highest boiling point</p> <p>the higher polarity hydrogen bond intermolecular force is stronger therefore ...</p>	

continued on next page

2-propanone	3-octanone
	
polarity moderately polar	polarity moderately polar
intermolecular force good dipole	intermolecular force good dipole
<p>explanation for choice of highest boiling point</p> <p>both are dipole which would be equivalent, however, the large 3-octanone molecule has a greater underlying van der Waals force in the non-polar alkane chain area which will make the intermolecular forces stronger overall, therefore ...</p>	

Bonus Question: Give the chemical formula for:

