

Name the following compounds using IUPAC or nomenclature accepted by IUPAC. Please note the following points of nomenclature.

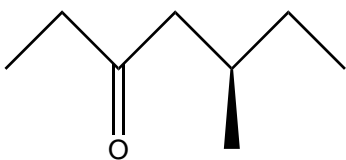
1. Please refer to your sheets for the root names of aromatics. You will need to learn these. It is not a bad idea to make flash cards.

2. The way you pick the principle chain is you find the chain containing the greatest number of principle groups (high priority groups). If there is a problem with this, then you look at the double bonds and triple bonds. If you have a tie with this area, you go to the longest chain. If there is tie at this level, you use the greatest number of substituents to make the decision. Notice you do not work your way down all the priorities. of all the functional groups. You only include the principle chain and the double an/or triple bones in the name.

3. The way you number the principle chain is as follows. The highest priority group receives the lowest number possible. At the next level, one uses the double and triple bonds. If the decision can't be made with double and triple bonds, one give the substituents the lowest numbers (first point of difference). Finally, alphabetization is used if there is still a tie.

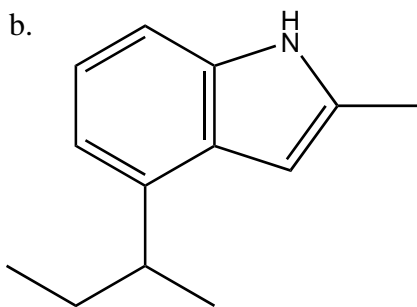
4. Other helpful pointers. The order of priority for your purposes is carboxylic acid(highest), aldehyde, ketone, then alcohol, alkenes and alkynes(lowest). The endings are oic acid (dioic, trioic etc. ) for carboxylic acids, al (dial, trial) for aldehydes,one (dione, trione, etc.) for ketones, ol for alcohols(diol, etc.). There are some variations for groups external to rings which I will go over.

Try to name the following compounds during class. Also, identify all functional groups.



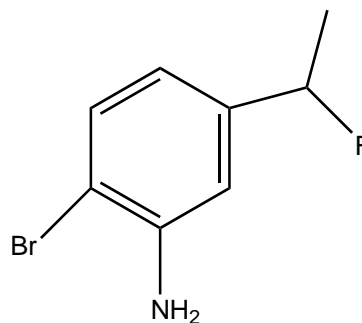
functional group ketone

name: 5R - 5-methyl-3-heptanone



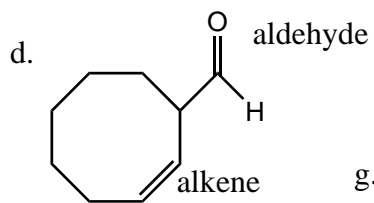
2-methyl-4-(1-methylpropyl)indole

c.

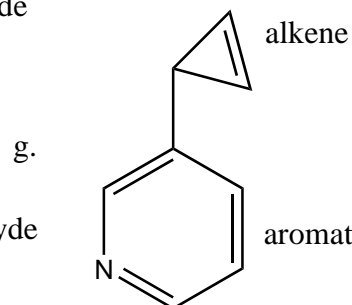


2-bromo-5-(1-fluoroethyl)aniline

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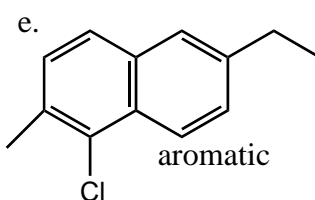


2-cyclooctenecarbaldehyde

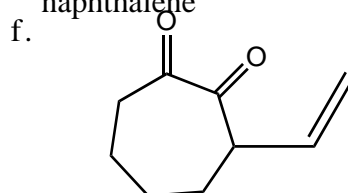


aromatic

3-(2-cyclopropenyl)-pyridine

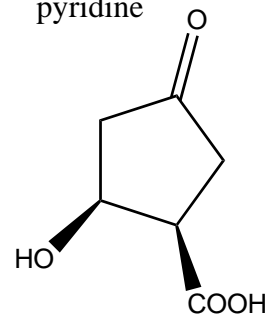


1-chloro-6-ethyl-2-methyl naphthalene



3-ethenyl-1,2-cyclohexanedione

h.



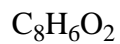
2-hydroxy-4-oxo-cyclopentanecarboxylic acid

Note, when a substituent, alcohols are called hydroxy groups, carbonyls are oxo groups.

Calculate the oxidation states for the central atoms in the following molecules.



Cr +6



C -2



Os +8

h. the compound listed under h above, is a carboxylic acid, secondary alcohol and ketone