

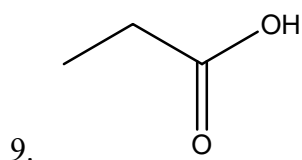
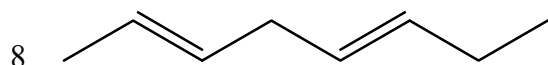
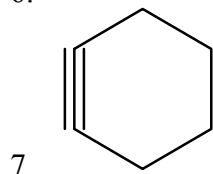
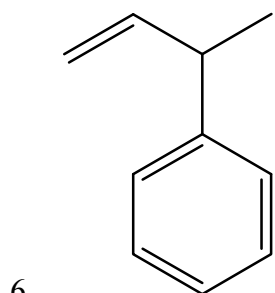
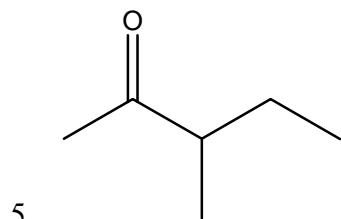
CH 302 Spring 2007 Worksheet 14

(Note: There are specific rules about which groups get priority in numbering, but you aren't responsible for knowing them. So if your name has different numbers from mine, try flipping your numbering system around on the carbon backbone and seeing if that fixes it.)

Draw the following compounds.

1. cyclopentene
2. 3,3-dimethylheptanoic acid
3. 1-bromo-4-hydroxypent-3-en-2-one
4. hex-4-ynal

Name the following compounds.



10. List the following in order of increasing miscibility with water: methane, methanol, butane, butanol
11. Briefly explain why benzene is a more stable structure than the seemingly similar cyclohexane.
12. Cyclohexane adopts a “chair” conformation (see below), while benzene is planar. Why is this?



13. Explain why you'd expect hexanol to have a higher boiling point than hexane.

14. How many structural isomers of heptane, C_7H_{16} , are there?

Name the following reactions (substitution, elimination, or addition)

15. $\text{bromomethane} + \text{OH}^- \rightarrow \text{methanol} + \text{Br}^-$

16. $\text{ethene} + \text{HCl} \rightarrow \text{chloroethane}$

17. $2\text{-fluoro-2-methylpropane} \rightarrow 2\text{-methylpropene} + \text{HF}$

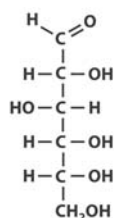
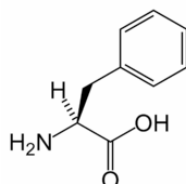
18. The compound written below is a monomer unit that makes a very famous polymers. Name the polymer it forms, its famous function and draw its structures.

Phenylethylene (also styrene or vinyl benzene) $C_6H_5CH=CH_2$

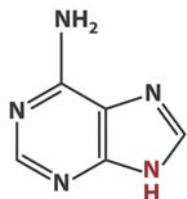
19. The compound written below is a monomer unit that makes a very famous polymers. Name the polymer it forms, its famous function and draw its structures.

Tetrafluoroethene

20. Several monomers that form very famous biopolymers are printed below. For each, name the category of biopolymer and indicate the features of the monomer that define the biopolymer.

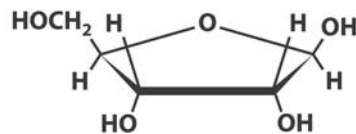


18 Glucose, $C_6H_{12}O_6$



22 Adenine

and



20 Ribose, $C_5H_{10}O_5$

