

## CHEM 121 Biological Chemistry Problem Set 6

1) Write the formulas and draw the structures for the following compounds:

- |                     |                   |                                             |                   |
|---------------------|-------------------|---------------------------------------------|-------------------|
| a) ethane           | b) propene        | c) butane                                   | d) cis-2-butene   |
| e) trans-2-butene   | f) 1,2-butadiene  | g) pentene                                  | h) cis-2-pentene  |
| i) trans-2-pentene  | j) hexane         | k) cis-2-hexene                             | l) trans-4-octene |
| m) trans-6-eicosene | n) cis-8-eicosene | o) cis-2-trans-5-cis-7-cis-9 eicosatetraene |                   |

2) Write out the following reactions with their products using structures:

- |                                 |                                  |
|---------------------------------|----------------------------------|
| a) propene + HCl                | b) propene + HBr                 |
| c) propene + HBr with peroxides | d) 2-butene + HF                 |
| e) 2-butene + HBr               | f) 2-butene + HBr with peroxides |
| g) butene + HBr                 | h) butene + HBr with peroxides   |
| i) hexene + HCl                 | j) hexene + HF                   |
| k) hexene + HI (THINK!)         | l) hexene + HBr                  |
| m) hexene + HBr with peroxides  | n) octene + HBr                  |
| o) octene + HBr with peroxides  | p) octene + HCl                  |

3) Write out the following acid-catalyzed reactions with their catalyst and products using structures:

- |                    |                   |
|--------------------|-------------------|
| a) propene + water | b) butene + water |
| c) pentene + water | d) hexene + water |
| e) heptene + water | f) octene + water |

4) Name the organic products in #'s 2 and 3, above, using IUPAC nomenclature