## **Answers to Chapter 22 Study Questions**

- 1. a) alkene, unsaturated
  - b) alkane, saturated
  - c) alkyne, unsaturated
- d) aromatic, unsaturated
- e) alkane, saturated
- f) alkane, saturated
- g) alkyne, unsaturated
- h) alkene, unsaturated
- i) aromatic, unsaturated

2. 
$$CH_3 - CH_2 - CH_2 - CH_2 - CH_3$$
pentane

- 4. 4-ethyl-3,4,6-trimethyloctane
- 5. a) should be 2-methylbutane; counting from wrong end.
  - b) should be 3-methylhexane; you can't have 1-methyl anything
  - c) needs 2 numbers if its "di"-methyl
  - d) should be 2-methylbutane; longest chain is 4 carbons, not 3 carbons; 2-ethyl is impossible.

7. (carboxylic acid)
$$CH_3 - CH - C = 0 - H$$

$$CH_3$$

$$C = C$$

b) condensation polymer, polyester, copolymer

c) condensation polymer, polyamide, homopolymer; polypeptide (polyalanine)

b) saturated 
$$(2n + 1 \text{ H's})$$

11. 
$$\begin{array}{c|ccccc} CH_3 & CH_3 \\ & & | & | \\ CH_3 & CH_2 & CH_2 & CH_3 \\ & & | & | & | \\ & & | & | & | \\ CH_3 & -C & -CH & -CC & -CH & -CH_2 & -CH_3 \\ & & | & | & | \\ & & | & | \\ & & CH_2 - CH_2 - CH_3 \end{array}$$