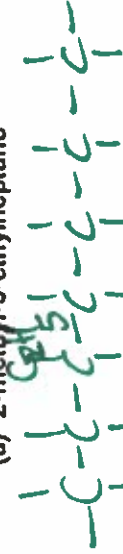


SBI 4UI/SBI OAI
Hydrocarbons and Functional Groups

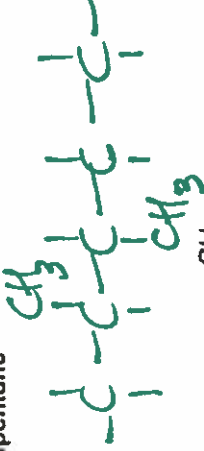
1. What is an *alkane*?
- hydrocarbon with single C-C bonds in a chain
- saturated with H

2. Draw the structural formula for the following alkanes.

(a) 2-methyl-3-ethylheptane

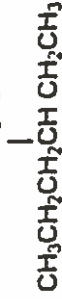


(b) 2,3-dimethylpentane



3. Name the following:

(a) C_2H_6



(b)



3-ethylhexane

2,4-dimethylhexane

4. What are isomers? What types are there?

- Same molecular formula, different arrangement of atoms
- structural isomers
- same atom formula, different arrangement

5. Which of the following are isomers of each other? How do you know?

(a) $CH_2=CH-CH_2-CH_3$

C_4H_8



(b)

C_4H_8

(c) $CH_3-CH-CH_3$

CH_3

(d)



(e) $CH_3-CH_2-CH_2-CH_3$

C_4H_{10}

C_4H_{10}

a, b, d = isomers
c & e = isomers
groupings of atoms within hydrocarbons

eg: $-OH$, $-C(=O)-OH$, $-CH_3$

6. What are functional groups?

groupings of atoms within hydrocarbons

7. Circle and name the functional group(s) in each of the following compounds.

(a) Vinylene (an anesthetic)



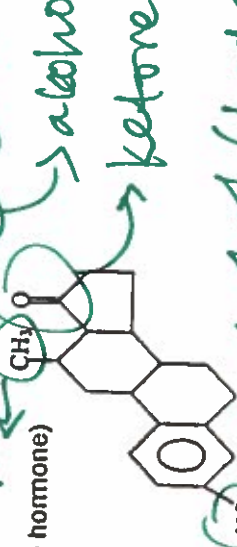
ether linkage

(b) Lactic acid (in sour milk)



carboxylic acid

(c) Estrone (a female hormone)



alcohol (hydroxyl)

ketone

8. Draw structural formulas for each of the following compounds:

(a) methanol



(b) propanal



(c) butan-2-amine



(d) heptanoic acid



(e) propanone



(f) pentane-2,3-diol



(g) octan-3-one

