

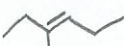


Part 1: Match the following. (**these terms are very important to know!)

1. c Molecules with the same formula, same bonding, but with a different spatial arrangement of atoms- not superimposable
2. d A molecule with at least one chiral carbon
3. b Molecules with the same formula but different bonding (atom attachment)
4. a A carbon with 4 different groups attached to it
5. e A carbon with 2 or more identical groups attached, or having only 2 or three bonds.

a. Chiral carbon b. structural isomers c. stereoisomers d. chiral molecule e. achiral carbon

6. Which of the following contains a chiral carbon?

- a. 4-ethyloctane 
- b. 2,2-dimethylpropane 
- c. 3-methyl-3-hexene 

~~d. 1,2-dimethylcyclopentane~~

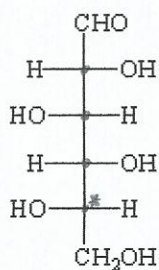
7. Stereoisomers are / are not superimposable upon each other.

Part 3: Carbohydrates

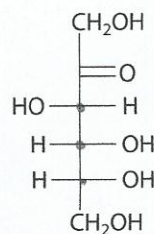
8. For the following two carbohydrates, identify A) how many chiral carbons there are and B) what the overall chirality is. c) generic name

a.

b.



4; L; aldohexose

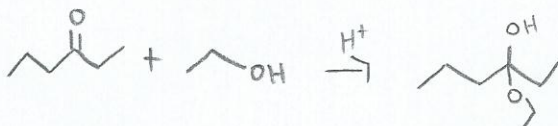
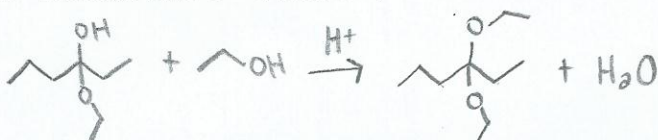


3; D; ketohexose

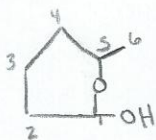
9. What is the C formula for carbohydrates? $C_n(H_2O)_n$ or $C_nH_nO_n$

10. Which is more predominate in nature, D or L, and is thus sometimes omitted from the name? D

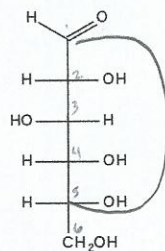
REVIEW

I. Aldehyde/Ketone + alcohol \rightarrow hemiacetal1. 3-methylheptanal + 1-ethanol \rightarrow 2. 3-hexanone + 1-ethanol \rightarrow II. Hemiacetal + alcohol \rightarrow acetal3. Product from 1 + 1-ethanol \rightarrow 4. Product from 2 + 1-ethanol \rightarrow 

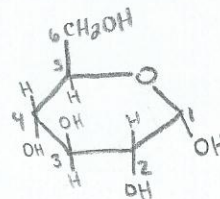
III. Put the following into a ring.



5. 5-hydroxyhexanal

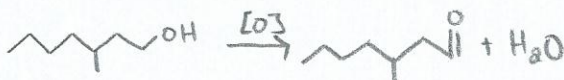


6.

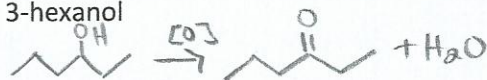


IV. Oxidize the following alcohols.

7. 3-methyl-1-heptanol

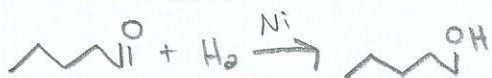


8. 3-hexanol



V. Reduce the following aldehydes or ketones.

9. Pentanal



9. 3-pentanone

