(21) **Today**

Chap 7: Carbohydrates

Next Class (22)

Chap 7: Carbohydrates

(23) **Second Class from Today**

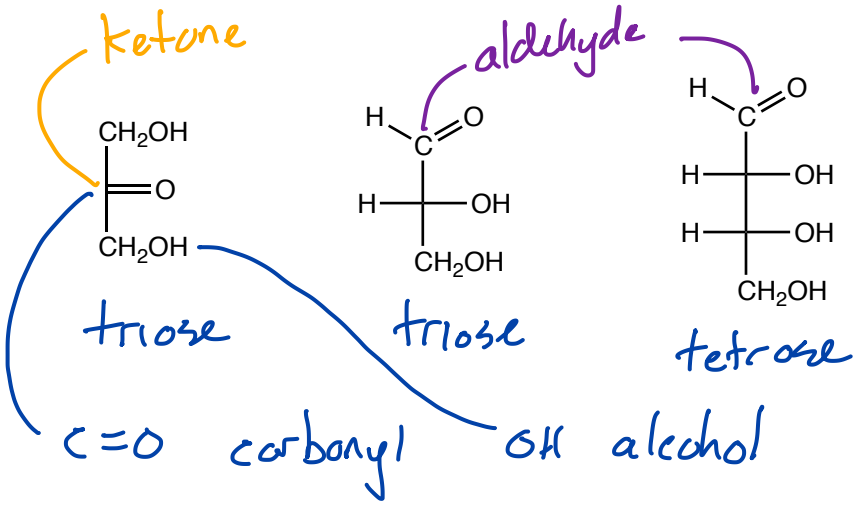
Test 2

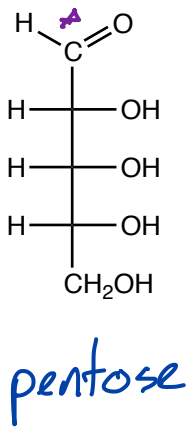
Third Class from Today (24)

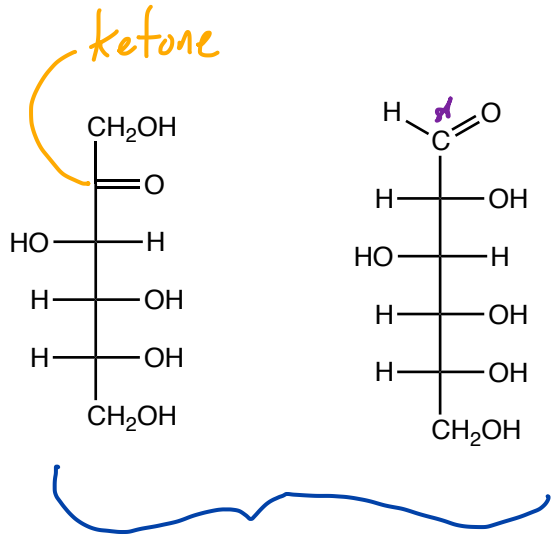
Chap 7: Carbohydrates

Test 2 on Chap 4 and 6 postponed to Wednesday, April 2

a single sugar | two sugars bonded together



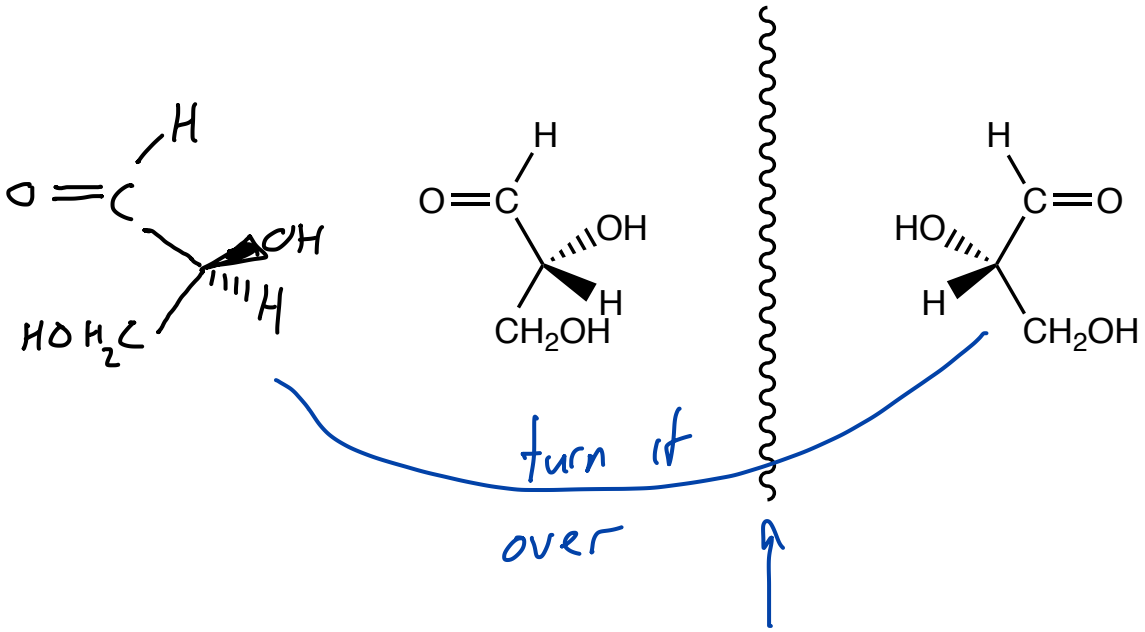




Ketose
ketone sugar

aldose
aldehyde sugar

ketohexose aldohexose



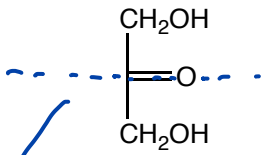
the left-right mirror reflected everything on the left of the molecule to the right but left up/down and in/out unchanged

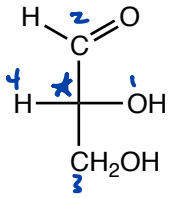
non superposable mirror images

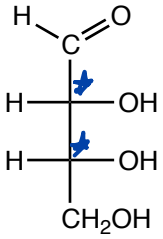
these molecules are enantiomers

same physical properties only difference is how they interact with other chiral molecules

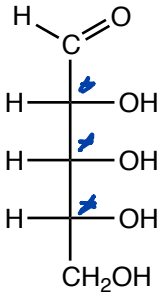
achiral 2 stereoisomers



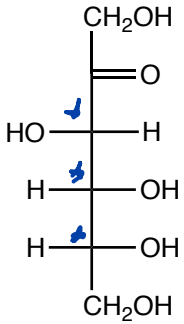


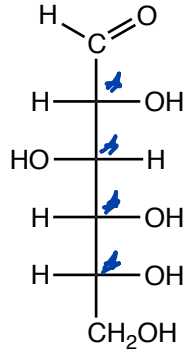


4 stereoisomers



8 stereoisomers





16 stereoisomers

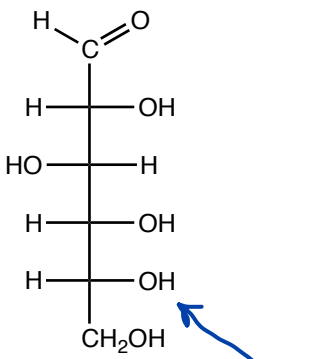
4 different groups bonded to a C atom creates a chirality center

no chirality centers in dihydroxyacetone so it is an achiral molecule

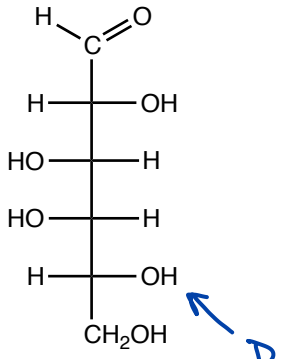
also there is a mirror plane as a symmetry element

molecules that contain a mirror plain are always achiral

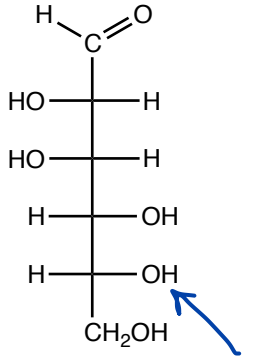
Stereoisomers – same connectivity - different 3D relationships



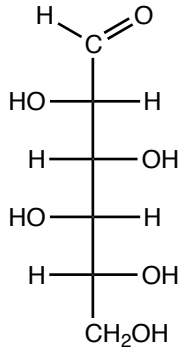
D-glucose



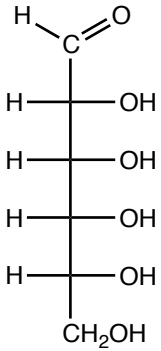
D-galactose



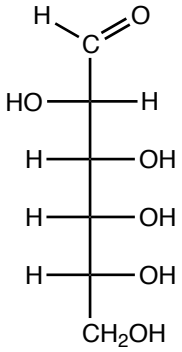
D-manose



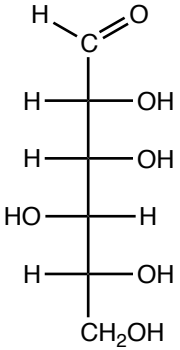
D-idose



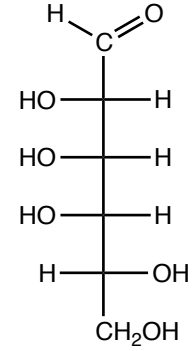
D-allose



D-altrose

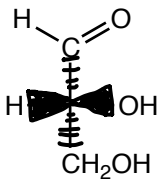


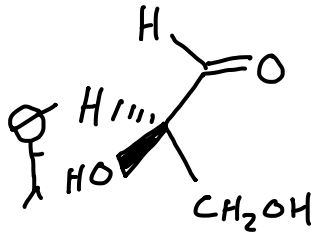
D-gullose

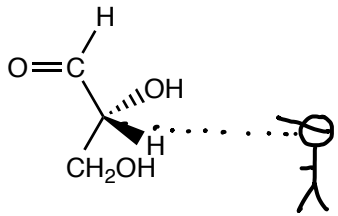


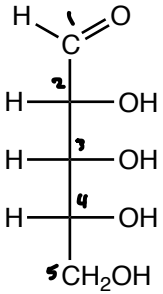
D-talose

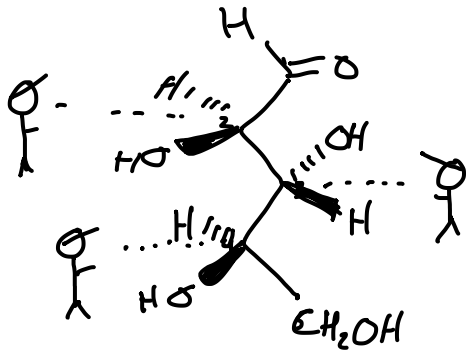
diastereomers – stereoisomers but are not mirror images of each other. They have different physical properties


H
O
C
H
OH
CH2OH


H
O
H
HO
CH2OH


H
O
C
OH
H
CH2OH


H
O
C
1
H
OH
2
H
OH
3
H
OH
4
5CH2OH


H
O
H
HO
OH
H
H
HO
CH2OH