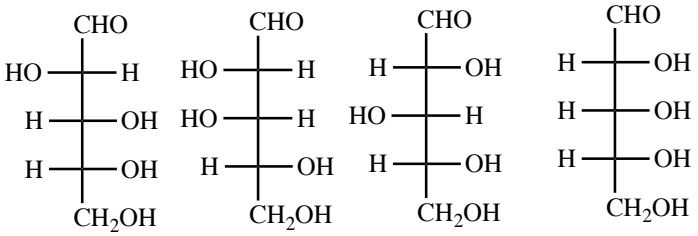
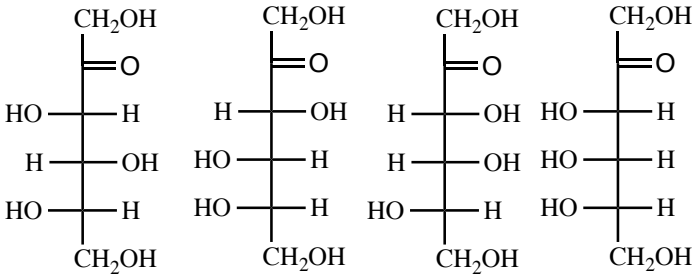
Chapter 24 Carbohydrates Practice Problems
Solutions

1



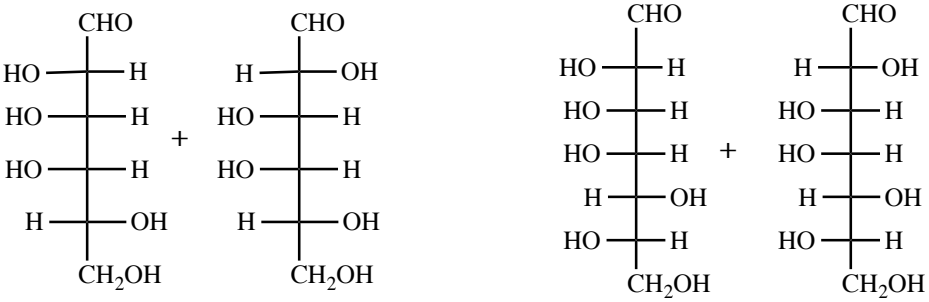
- *Aldopentoses are 5-carbon carbohydrate aldehyde compounds*
- *The bottom-most OH group is fixed in place because they are specified as naturally–occurring (D) stereoisomers*

2



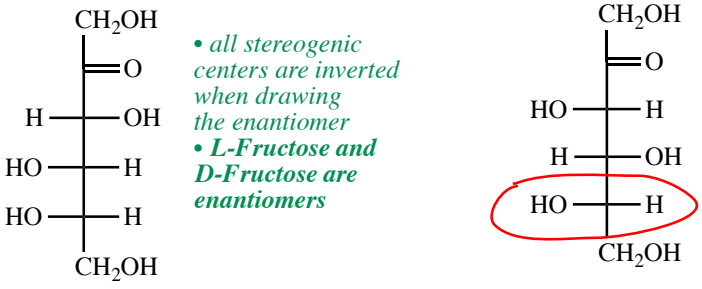
- *Ketohexoses are 6-carbon carbohydrate ketone compounds*
- *The bottom-most OH group is fixed in place because they are specified as non–naturally occurring (L) stereoisomers*

3



A **B**

4

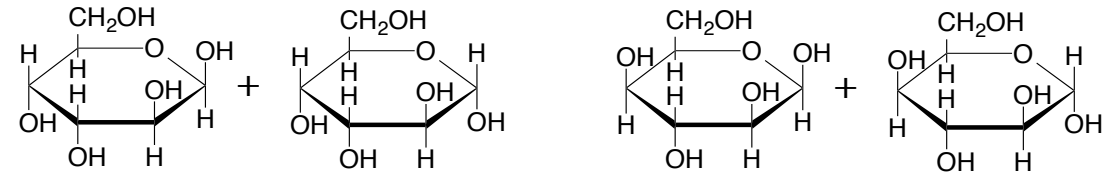


L-Fructose

- *all stereogenic centers are inverted when drawing the enantiomer*
- ***L-Fructose and D-Fructose are enantiomers***

- *compound A has only 1 of its stereocenters inverted relative to D-Fructose*
- ***If all 3 were inverted, they would be enantiomers, but since only 1 is inverted, they are diastereomers***
- ***Because compound A and D-fructose differ in stereochemistry at only 1 of the stereogenic centers, they are also epimers***

5



β–D–altropyranose α–D–altropyranose β–D–idopyranose α–D–idopyranose

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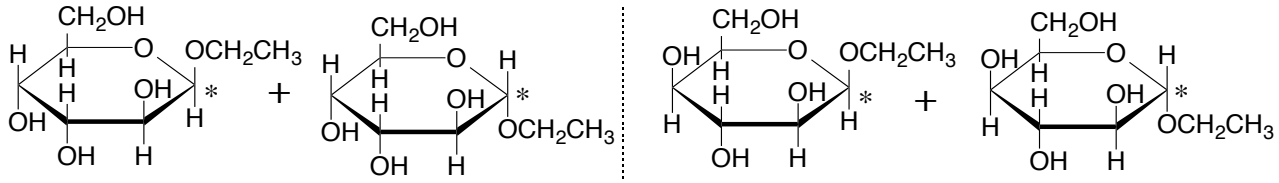
6



• marks the glycoside linkages