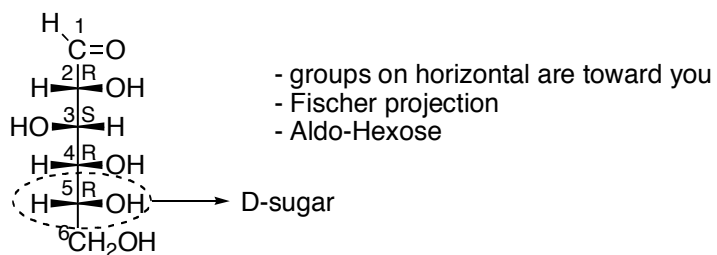
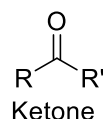
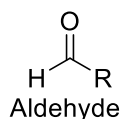
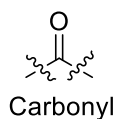
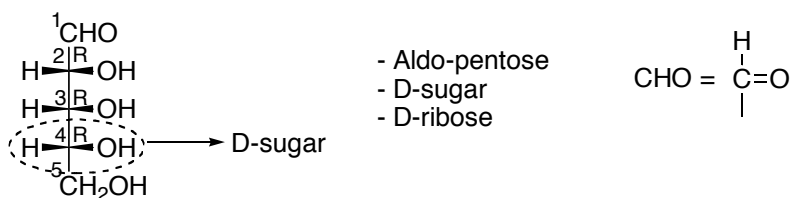


D-Glucose:

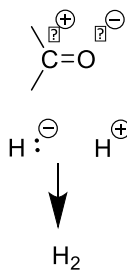
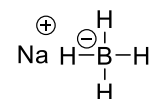
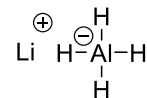


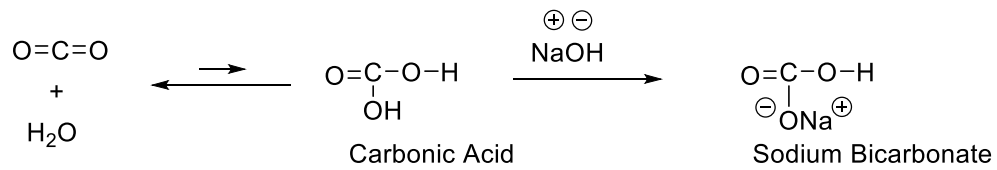
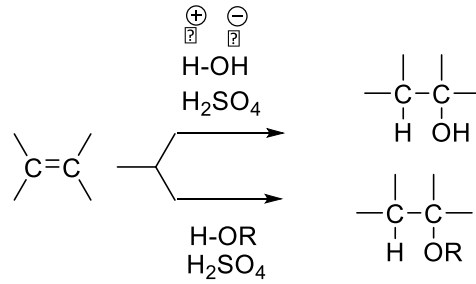
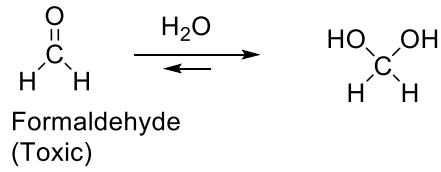
- A D-sugar has R configuration for highest number stereogenic center.

D-Ribose:

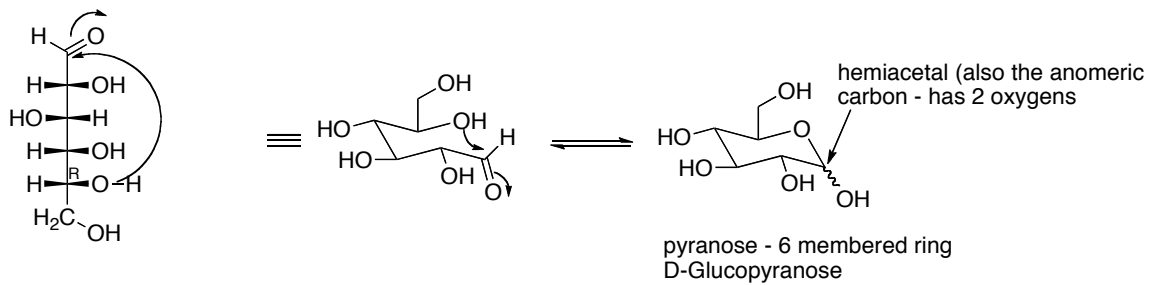
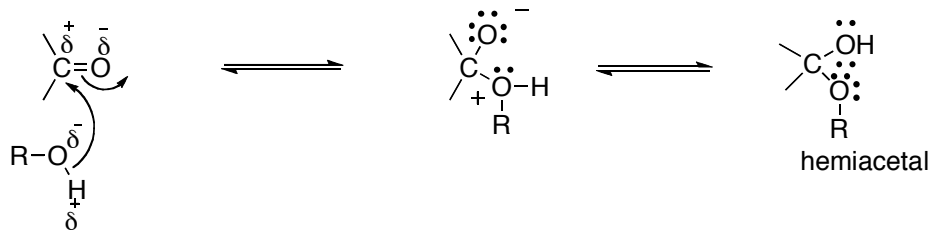


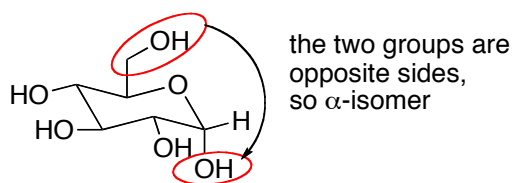
R & R' ≠ H

Hydride donors: H^- Sodium Hydride
(less reactive)Lithium Aluminum Hydride
(very reactive)

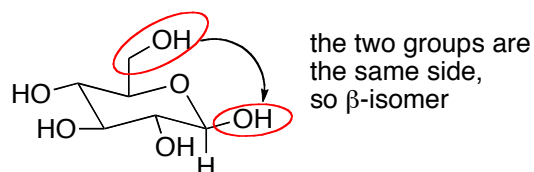


Hemiacetal formation:



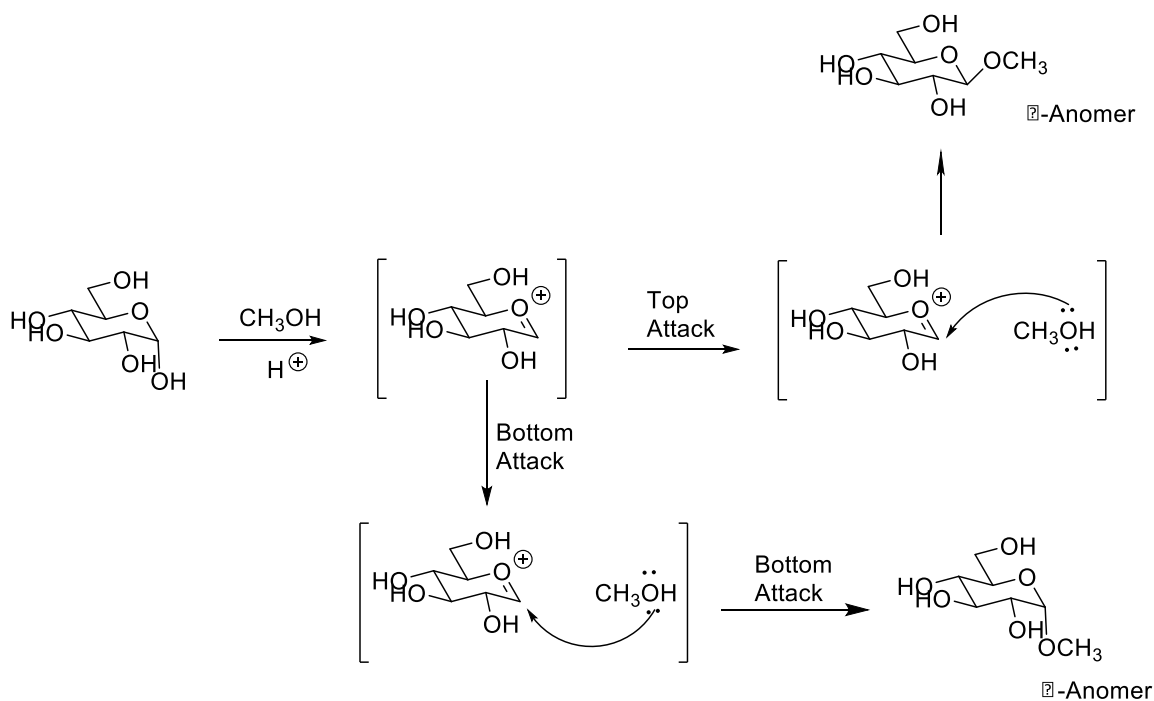


α -D-glucopyranose

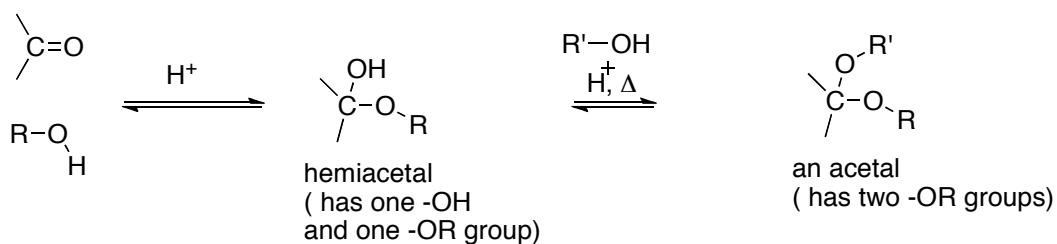


β -D-glucopyranose

* in the above case, the hemiacetal formation could give both isomers (α and β), depending on which face of the carbonyl is attacked. Usually α favoured (anomeric effect)



Acetal formation:



Mechanism of Acetal formation:

