The glycosidic bond is formed between a hydroxyl group attached to the anomeric carbon atom of one monosaccharide and any hydroxyl group of another monosaccharide.

Consequently, the formation of a disaccharide by two identical D-series hexopyranose ring structures results in 11 different isomers. Of these, in eight of isomers, the anomeric configuration with at C-1. The three other isomers are created by acetyl formation between the two C-1 atoms by the glycosidic oxygen atom in either the α, α; the α, β; or the β, β configuration.

A similar series of 11 isomers is formed if the two identical residues of hexopyranose residues are of the L-series. The number of isomers can be increased by including furanose forms. However, in the case of non-identical monosaccharides, the number of isomers formed is more because the carbohydrate residues can occupy the first or the second position, i.e., the disaccharide could be either reducing or non-reducing in nature. The addition of carbohydrate residue brings a great increase in possible isomers.