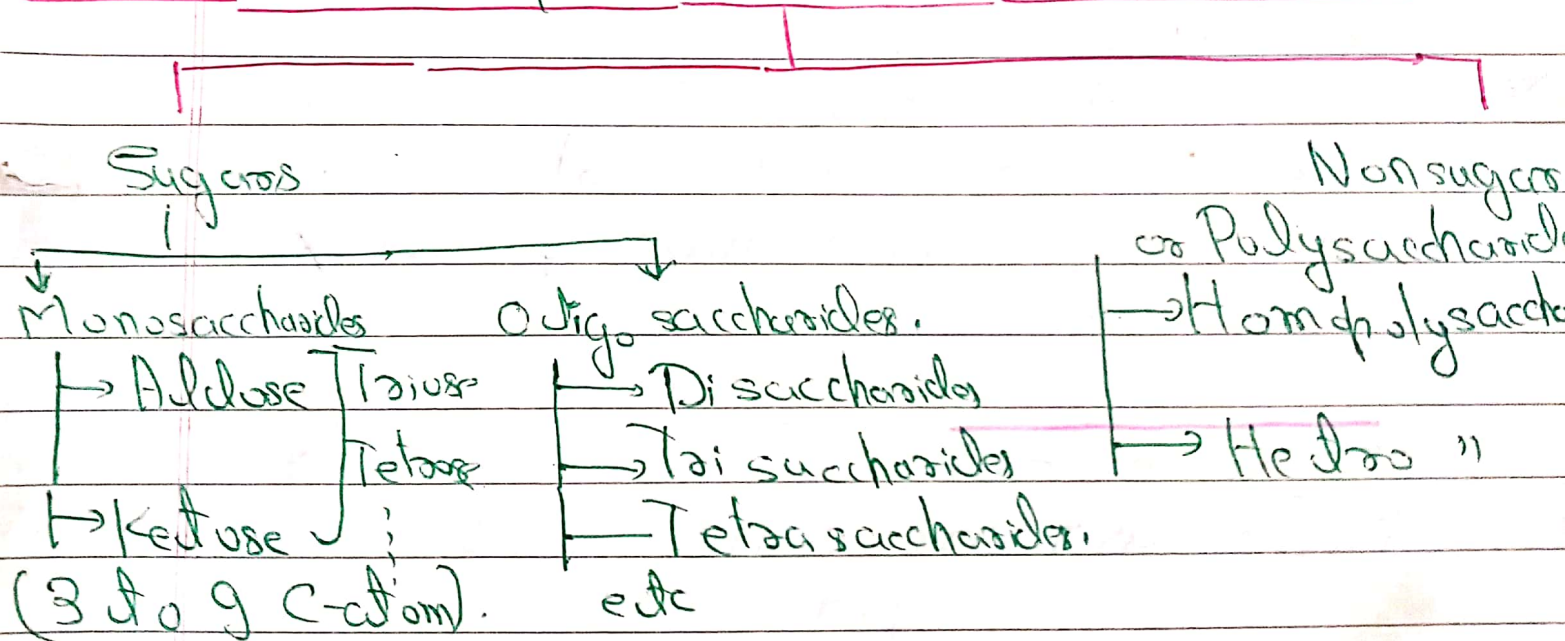


Question: Discuss the classification of carbohydrates.

Answer: Carbohydrates or Saccharides.

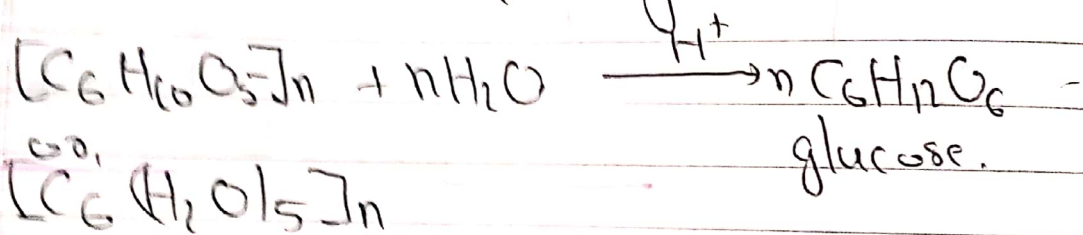


Definition - Sugars are simple carbohydrates. They are white crystalline solids, soluble in water and have sweet taste.
example - dth glucose, sucrose.

Non-sugars or polysaccharides - They are complex carbohydrates polymers. They are amorphous solids, ~~soluble~~ ^{insoluble} in water, tasteless.

On hydrolysis, they have large number of monosaccharide units.

Example - Starch and cellulose are non-sugar or homopolysaccharides. They give large number of glucose molecules on hydrolysis.

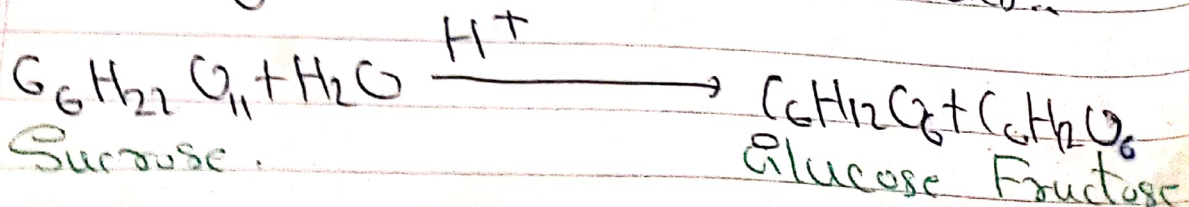


Monosaccharides - They are simplest sugars which don't give any carbohydrate on hydrolysis.

Example - glucose (Aldohexose) and Fructose (Ketohexose).

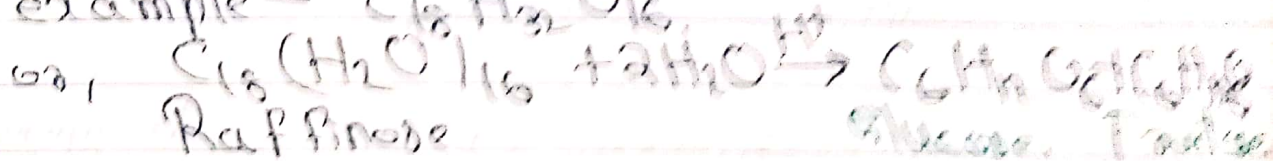
- $C_6H_{12}O_6$ are monosaccharides.

Dissaccharides - The sugars which gives two molecules of monosaccharides on hydrolysis are called dissaccharides.



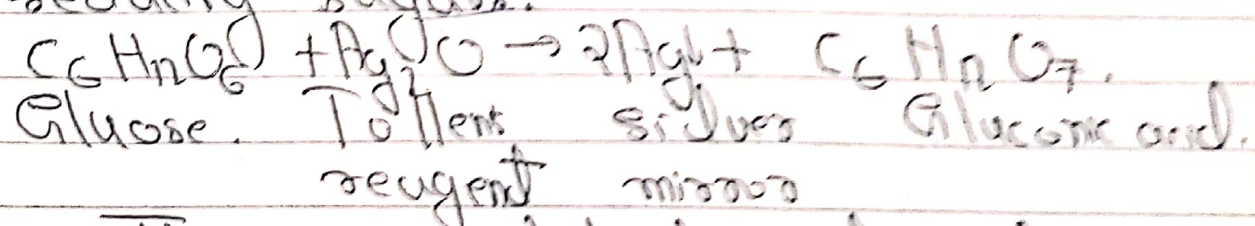
Trisaccharides - The sugar which gives three molecules of monosaccharides on hydrolysis is called trisaccharide.

example - $C_{18}H_{32}O_{16}$



Reducing and non-reducing sugars -

- (a) The sugars which reduce Tollens' reagent ($AgNO_3 + NH_4OH$) into metallic silver (silver mirror)
 - (b) Fehling solutions into red cuprous oxide, are called reducing sugars.
- Example - Glucose and Fructose are reducing sugars.



The sugar which does not reduce Tollens' reagent and Fehling solution is called non-reducing sugar.
Example - Sucrose has no free aldehyde group. It does not reduce T.R and F.S. hence sucrose is non-reducing sugar.