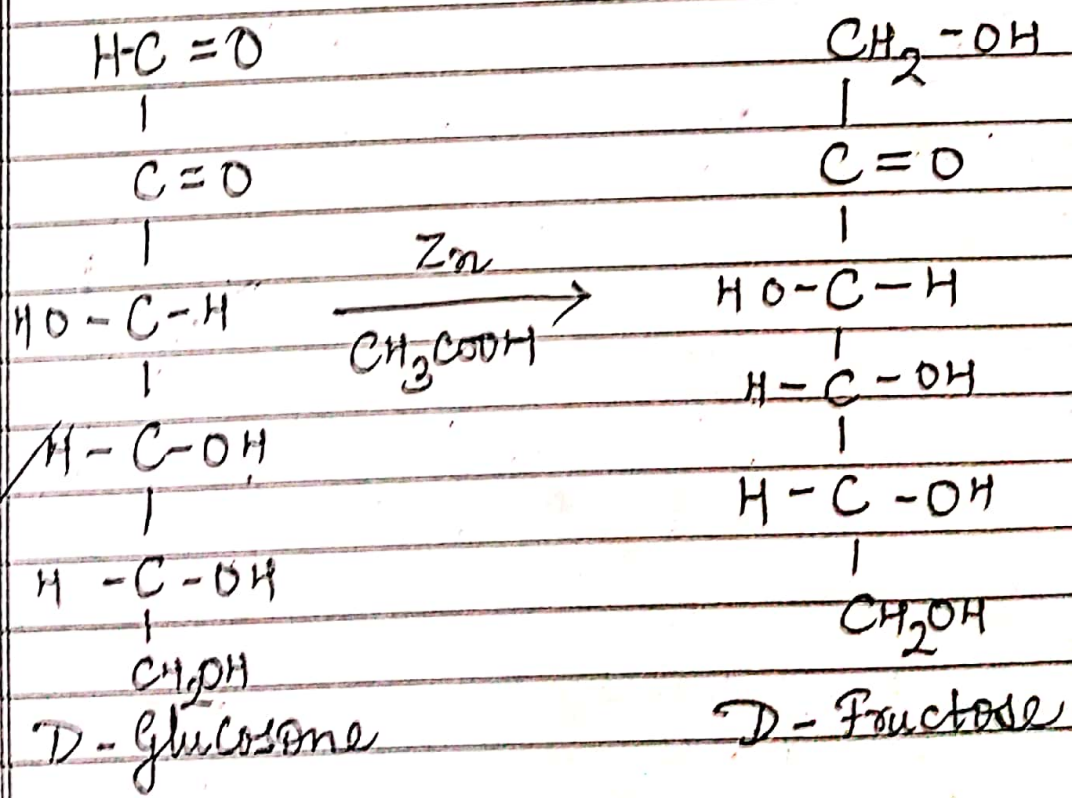
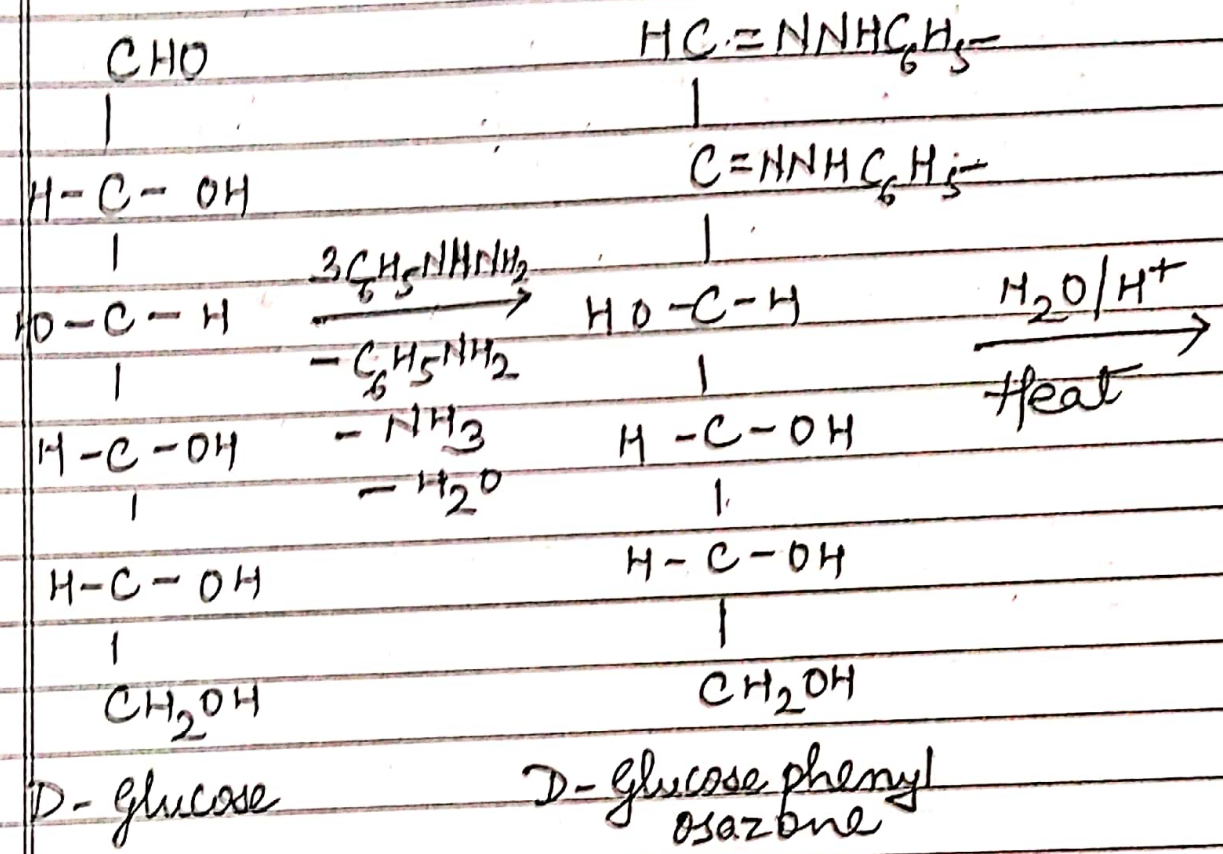


Conversions of Glucose into Fructose and vice versa :-

① Glucose into Fructose (Aldohexose into Ketohexose) :-

Glucose is converted into fructose by formation of Osazone followed by acid hydrolysis and reduction.

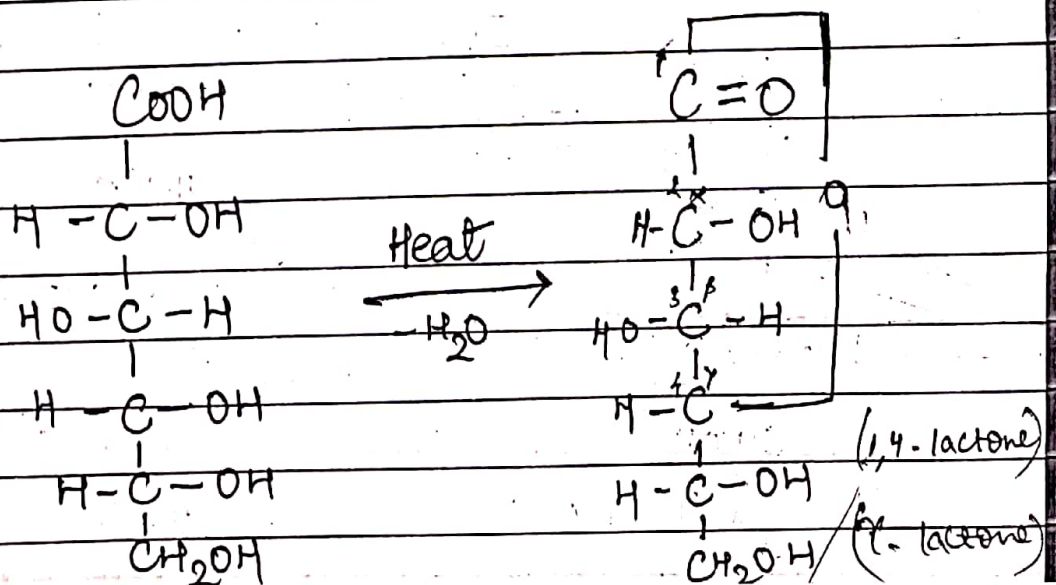
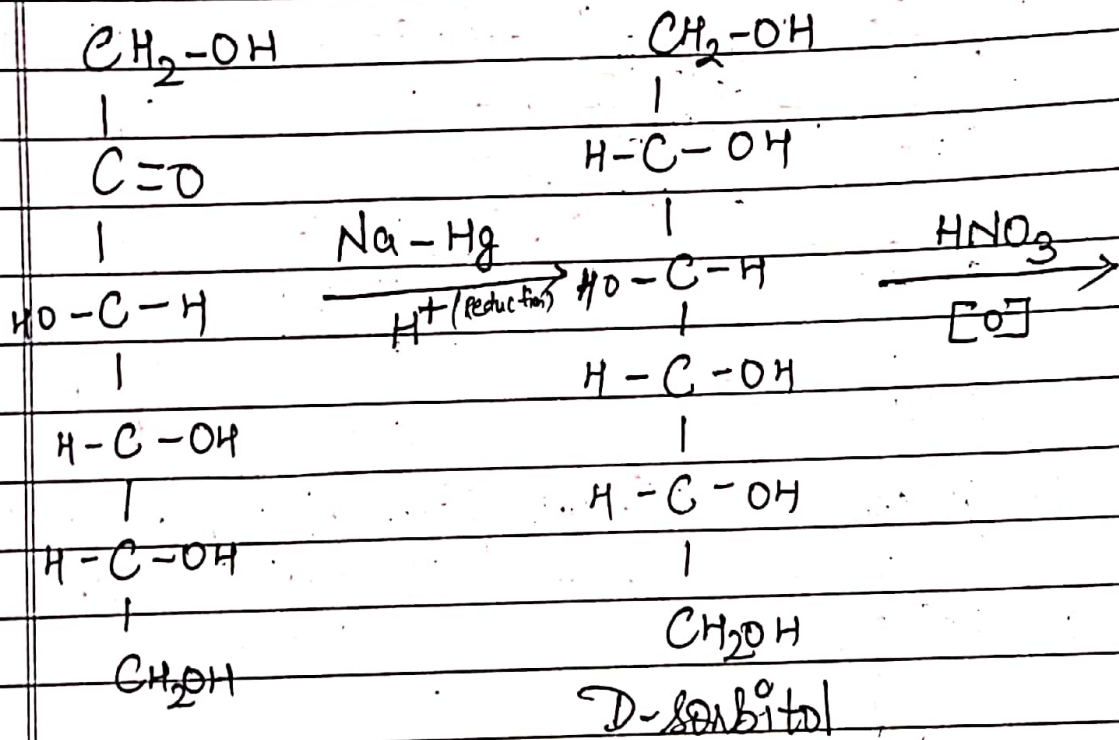


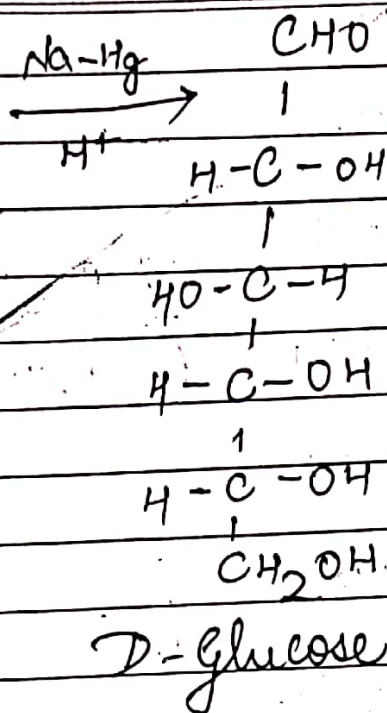
Cyclic amide - Lactone Sorbitol - ^α isomer of glucose used as syrup.

(2) Fructose into Glucose (Ketohexose into

Aldohexose) :-

Fructose is converted into glucose by redox reactions followed by formation of Lactone (Cyclic ester).

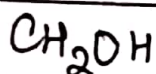
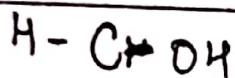
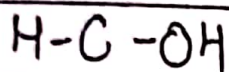
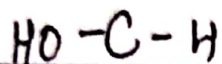
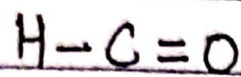




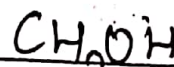
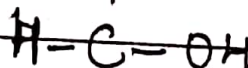
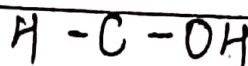
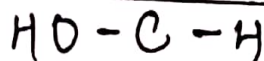
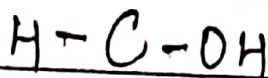
Increase in carbon chain
Conversion of Aldopentose into Aldohexose
(D-arabinose into D-glucose) :-

Aldopentose is converted into aldohexose by Kiliani's synthesis or Kiliani-Fischer synthesis.

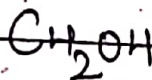
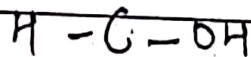
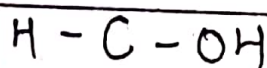
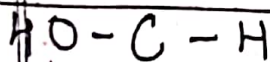
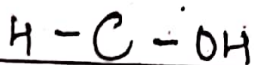
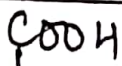
In this method, aldopentose is treated with hydrogen cyanide to obtain cyanohydrin which on hydrolysis ~~can~~ gets converted into aldonic acid. On heating, aldonic acid loses a water molecule and gets converted into γ -lactone. On reduction γ -lactone is converted into D-glucose.



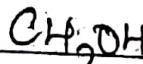
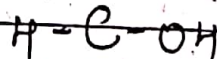
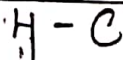
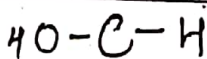
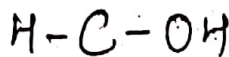
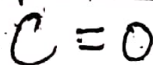
D-Arabinase
(Aldopentose)



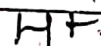
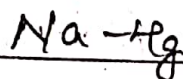
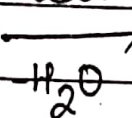
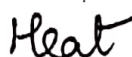
D-glucosamine
~~D-sorbitol~~
cyanohydrin

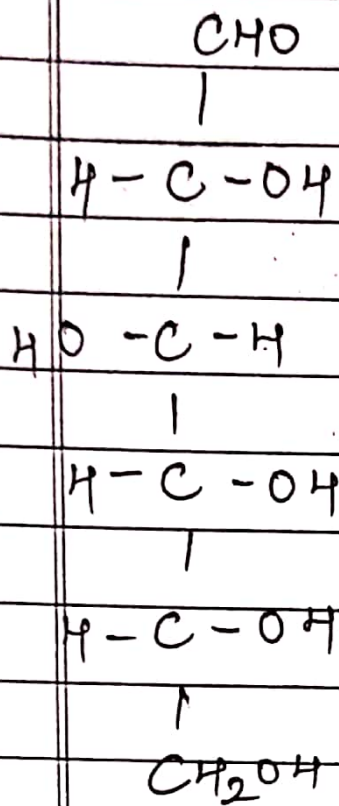


D-Gluconic acid.



γ -D-glutolactone





D-glucose