

CARBOHYDRATES 1.

28-05-2020 Lecture-8 Deg-II (Hons.& Sub.)

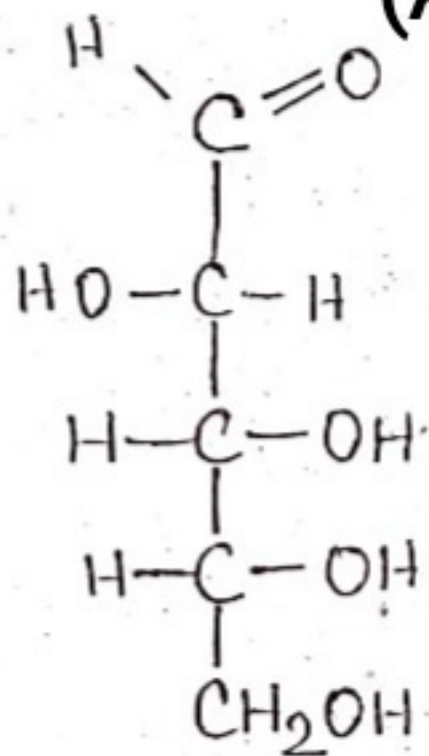
Topic - Interconversion Of Monosaccharides.

Conversion of an Aldose into the next higher Aldose.

(example :- Kiliani-Fischer Cyanohydrin Synthesis)

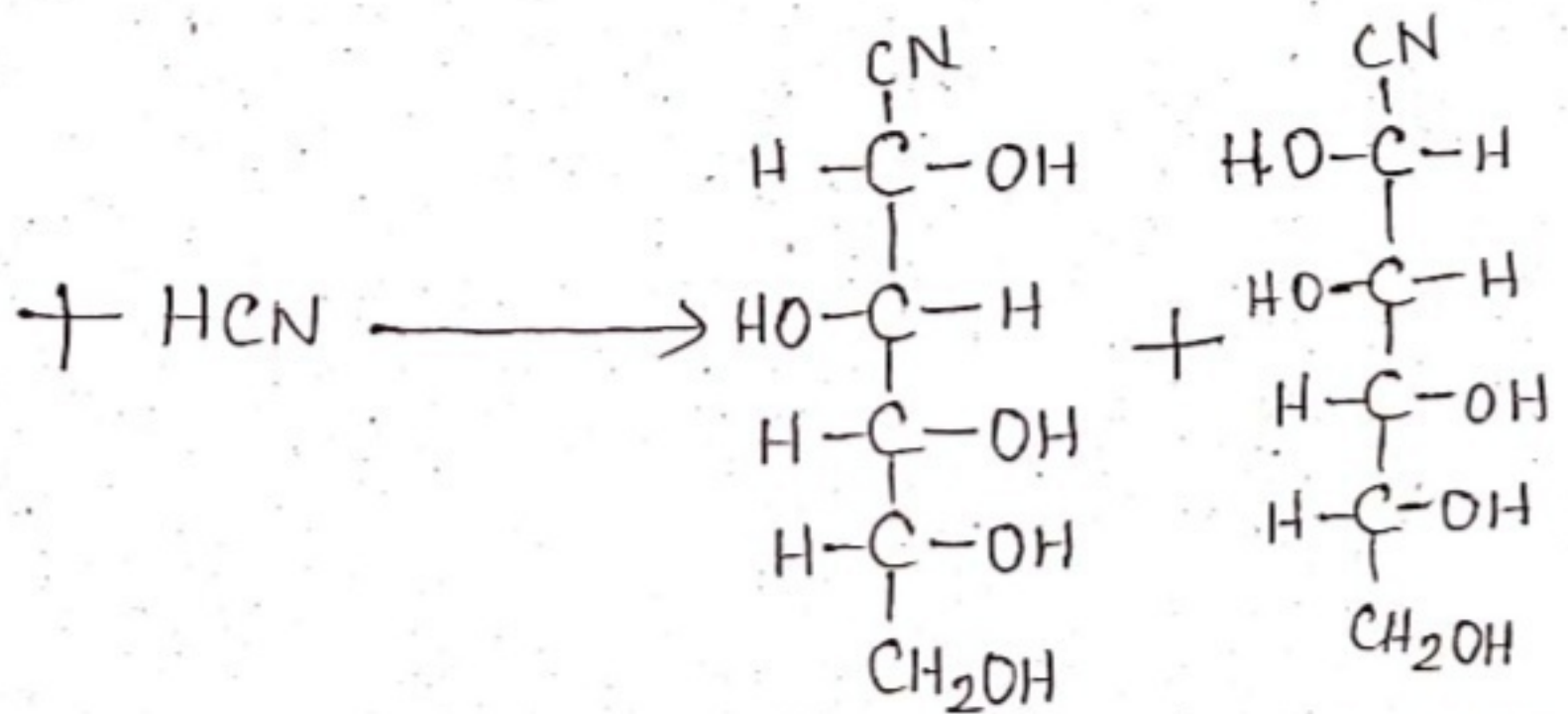
Conversion of D-Arabinose to D-Mannose & D-Glucose

(An Aldopentose to Aldohehexose)



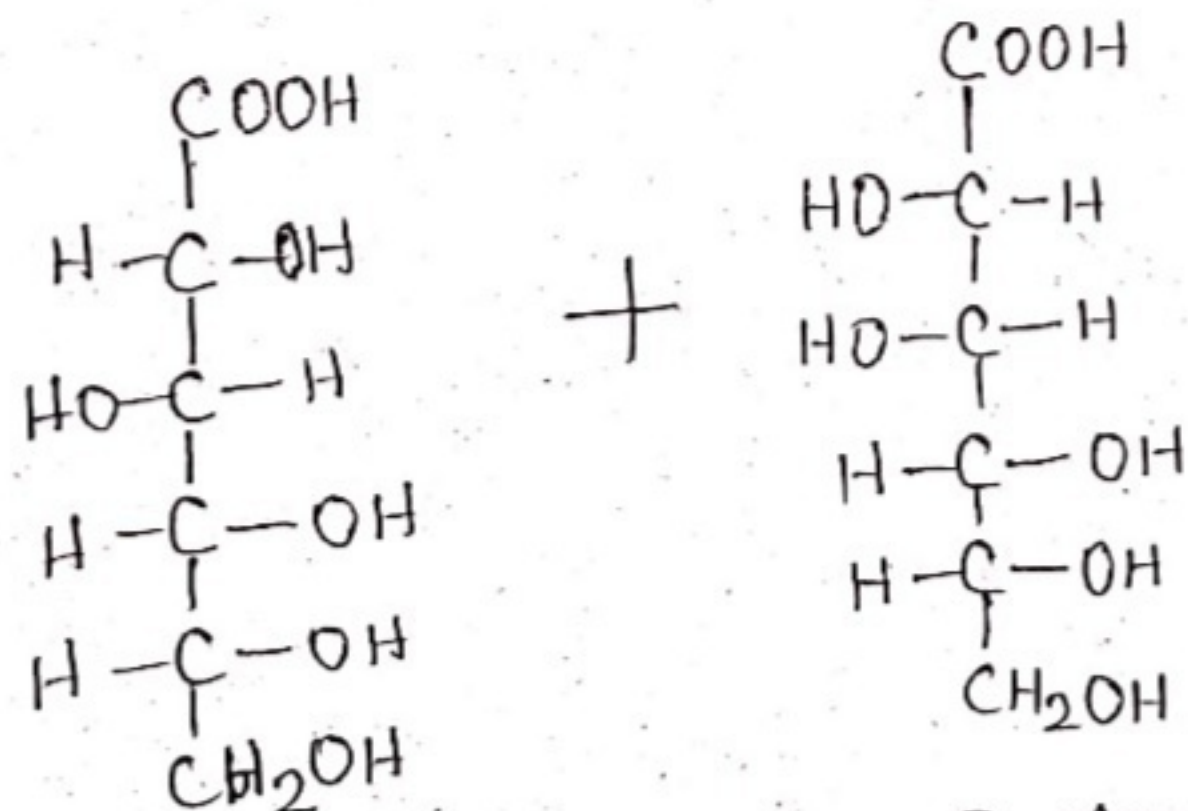
D-Arabinose

(An aldopentose)



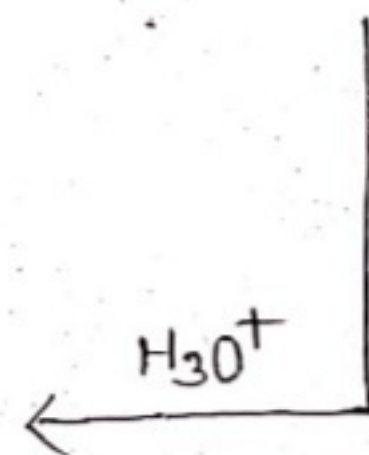
D-Glucononitrile

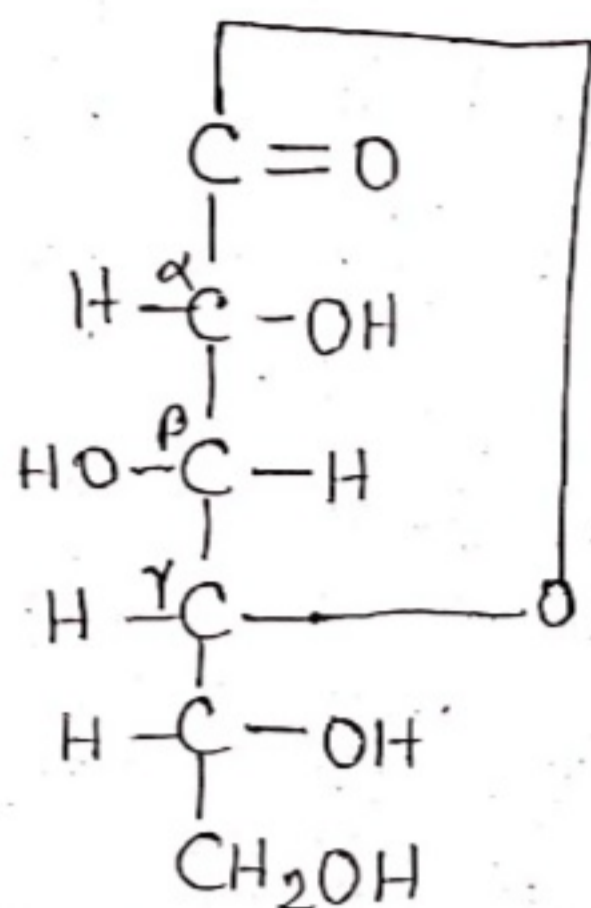
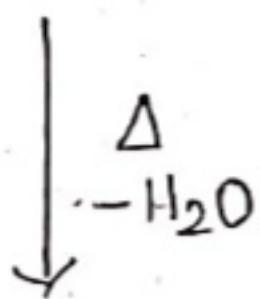
D-mannonitrile



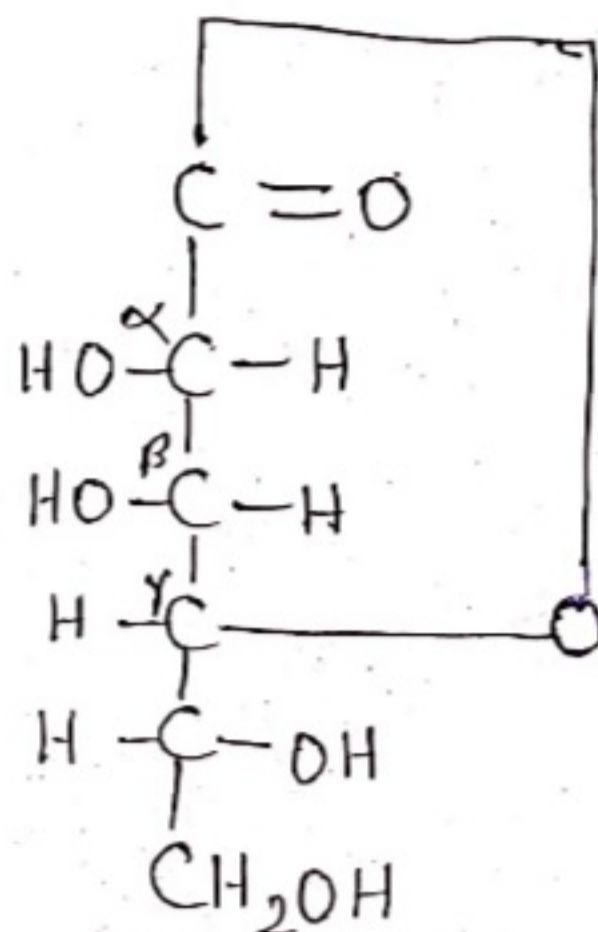
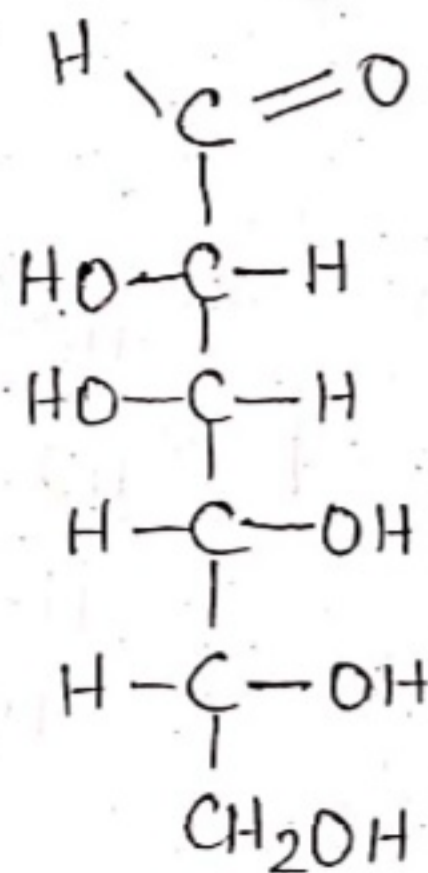
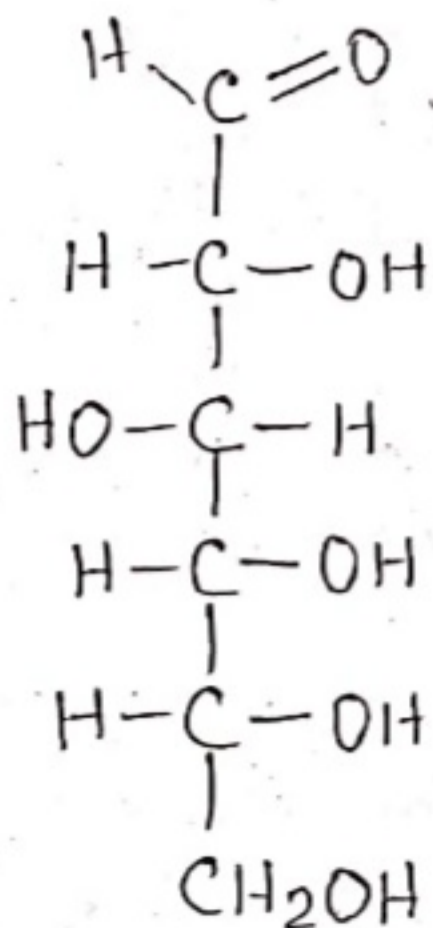
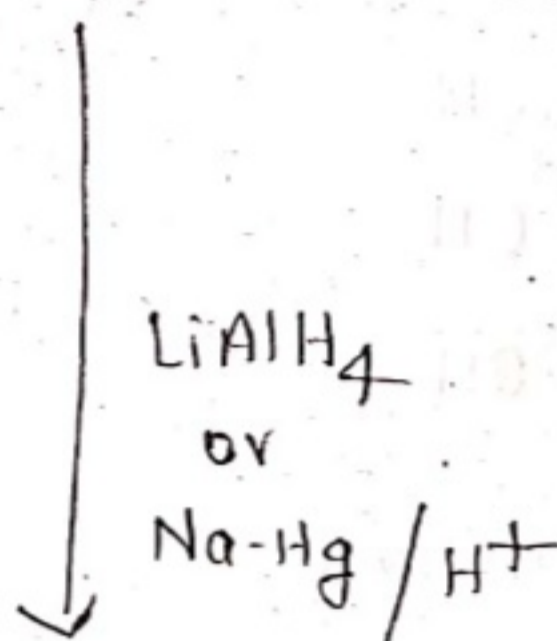
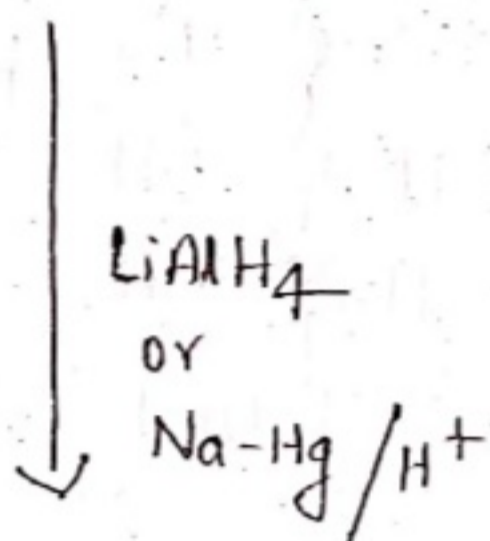
D-Gluconic acid $\xrightarrow{\Delta} -\text{H}_2\text{O}$

D-Mannonic acid





+

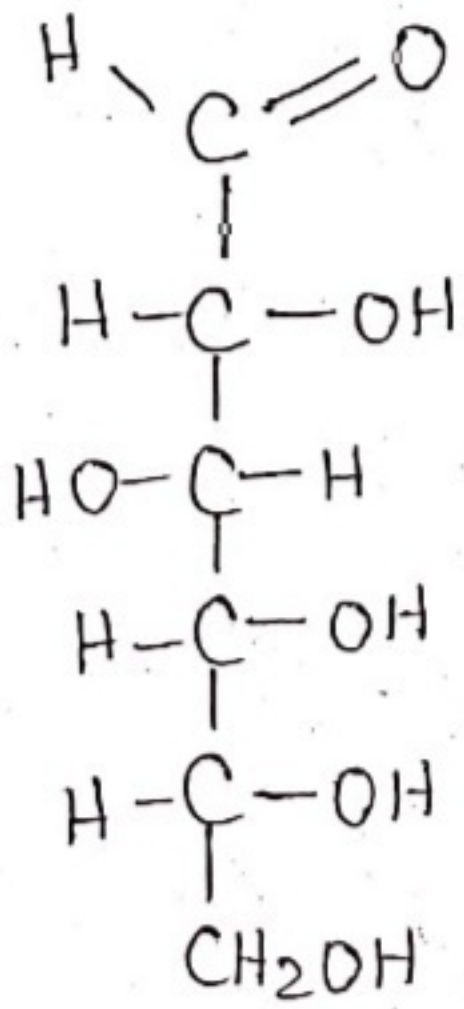
 γ -D-Gluconolactone γ -D-Mannonolactone

D-Glucose

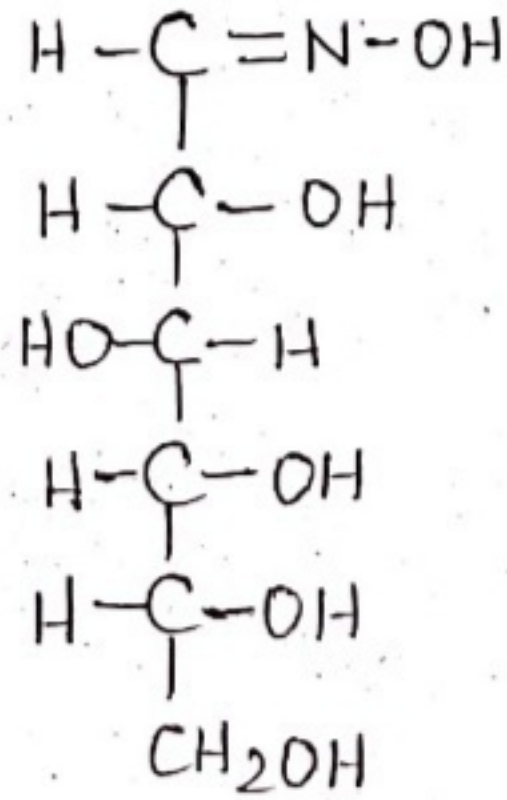
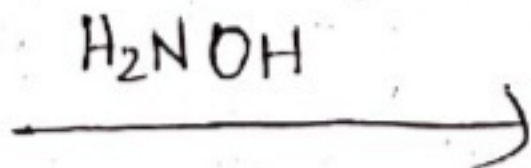
D-mannose

Conversion of An Aldose to the next Lower Aldose

WOHL METHOD

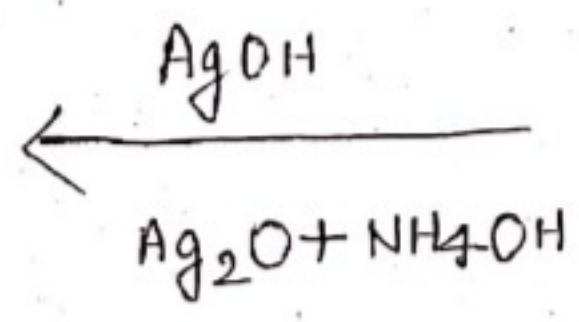
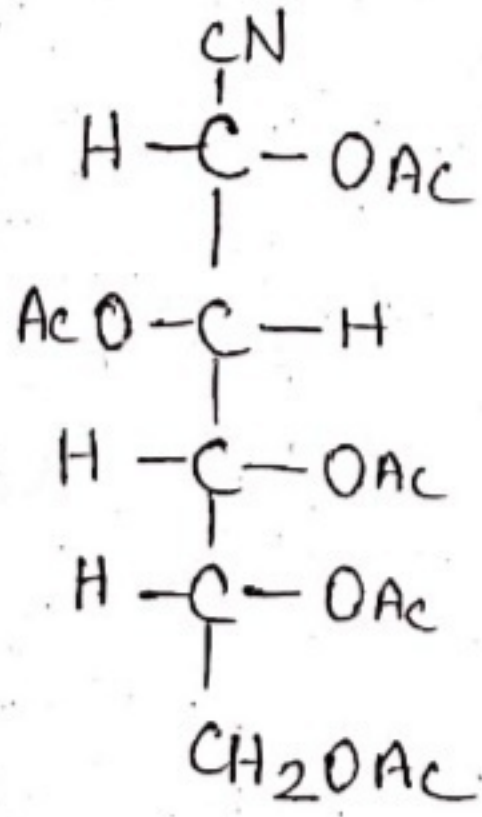
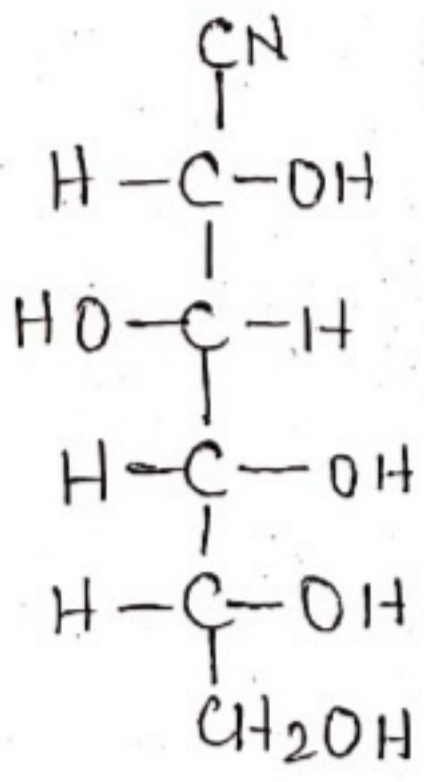
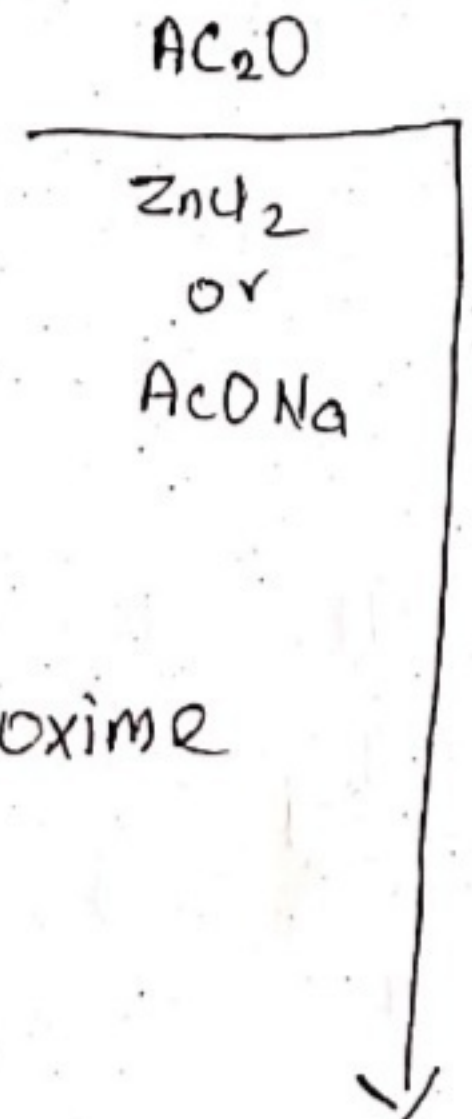


D-Glucose

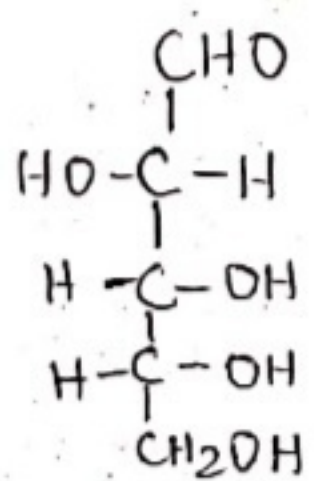
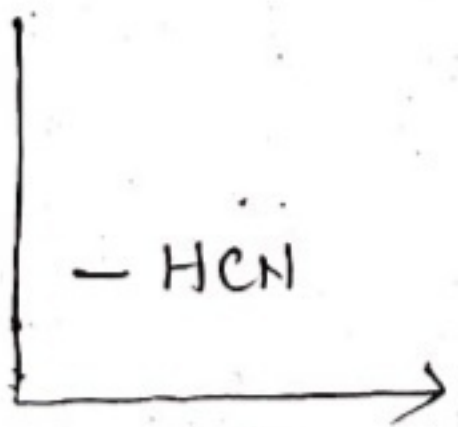


D-Glucose Oxime

(Ac = CH₃CO-)



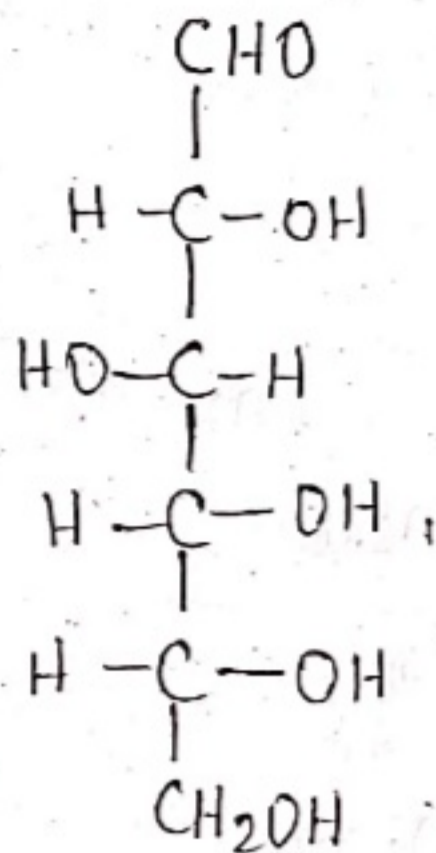
D-Glucononitrile
 Pentaacetate



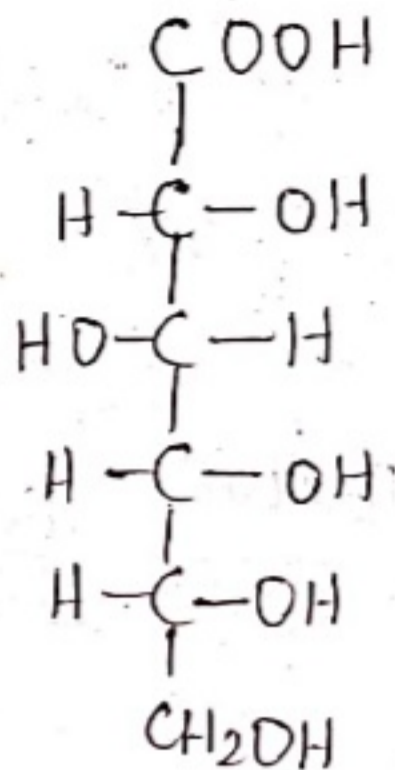
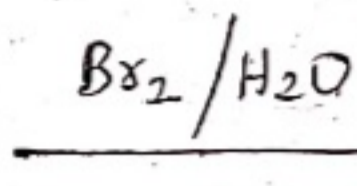
D-Arabinose (An Aldopentose)

Ruff's Method

4.

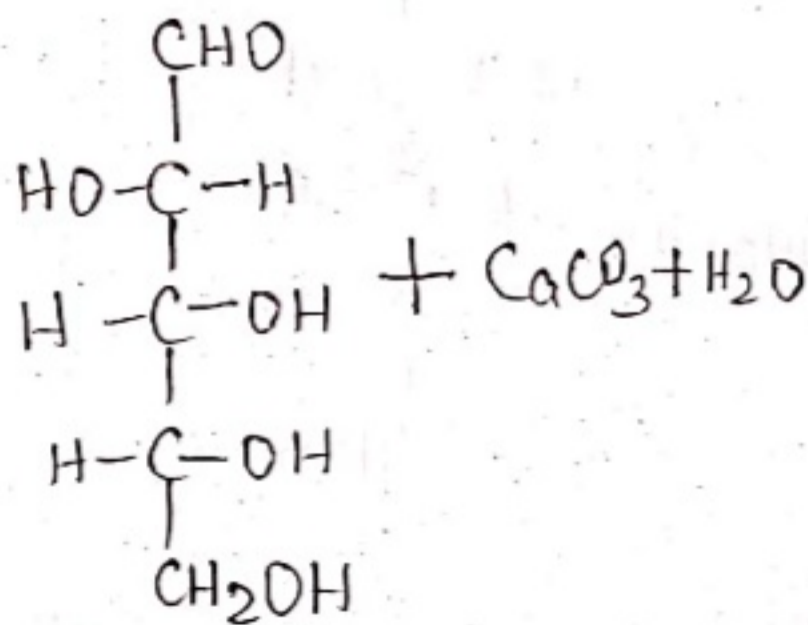


D-Glucose
(An Aldohexose)



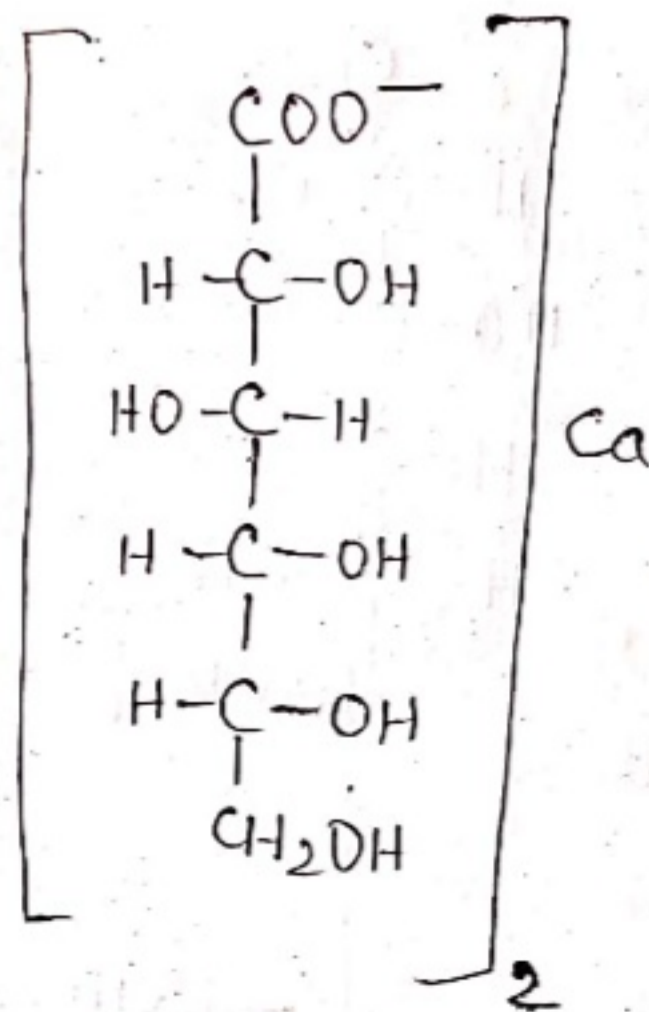
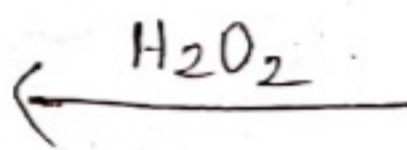
D-Gluconic acid

CaCO_3



D-Arabinose

An Aldopentose:



Calcium D-gluconate

completed.