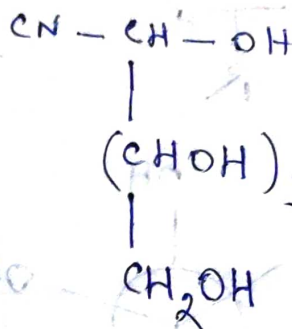
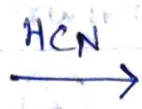
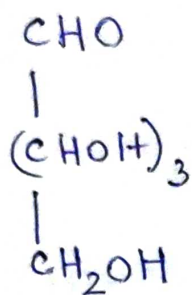


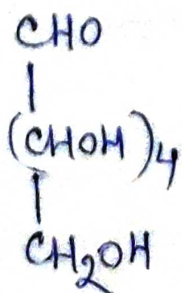
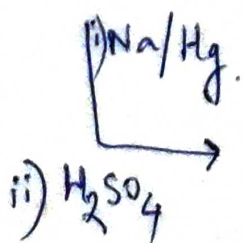
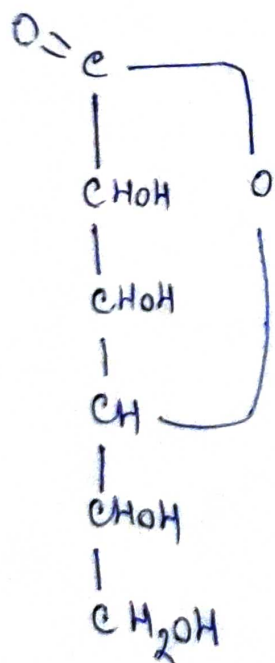
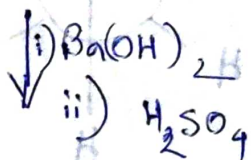
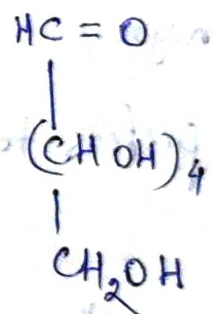
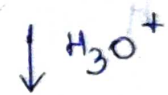
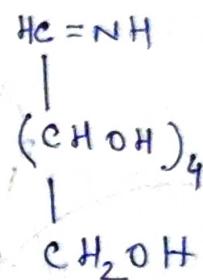
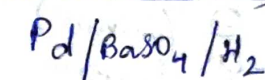
Ascending and Descending of sugar series :-

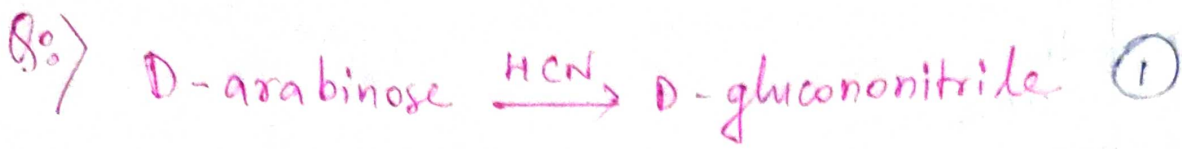
Killiani Fischer synthesis :-

Aldose \rightarrow Aldose + 1



Lindlar catalyst



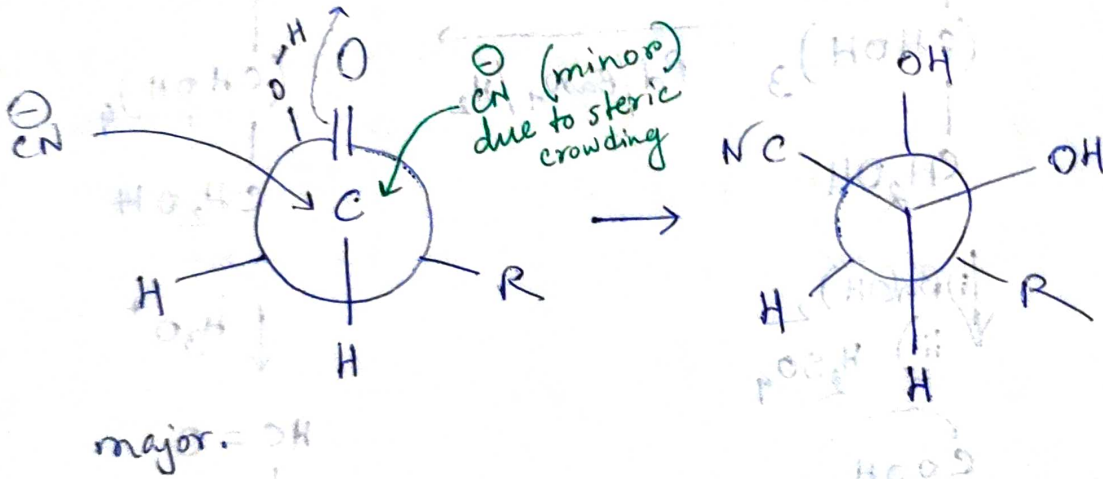
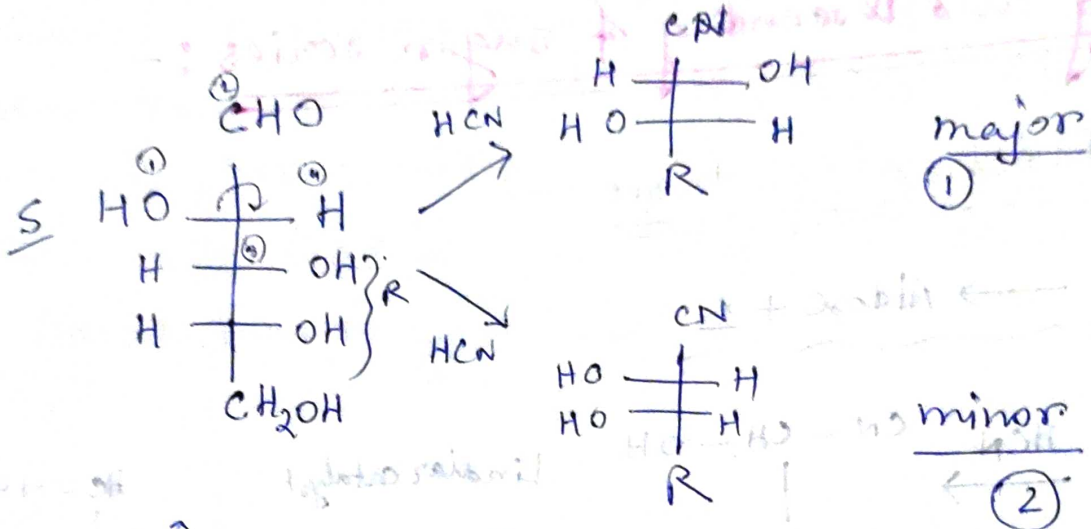


+

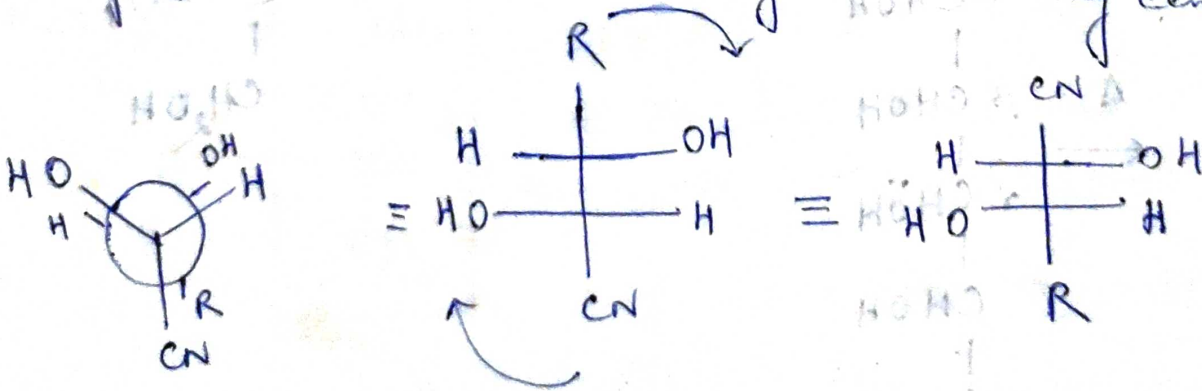


Which one is major pdt?

⇒

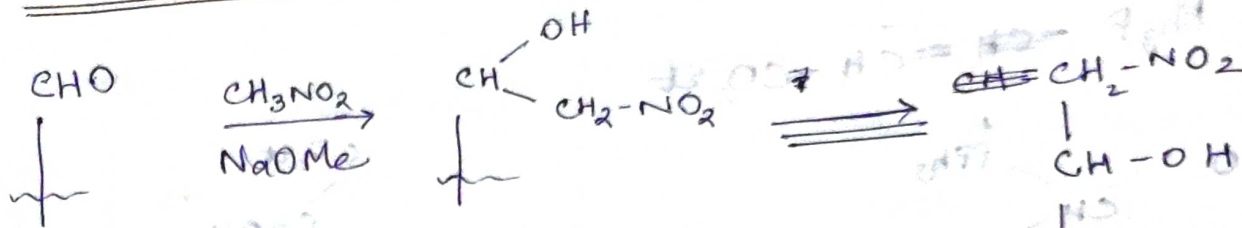


CN⁻ prefers to attack the sterically less crowding centre.



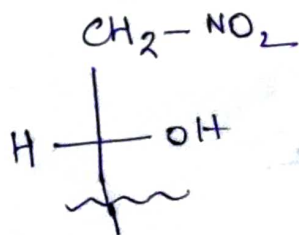
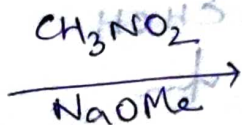
Aldehyde \rightarrow aldose + 1

Sowden method :-

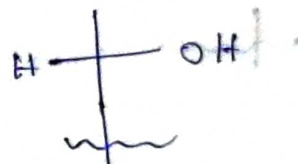


70% H_2SO_4
Net carbonyl syn.

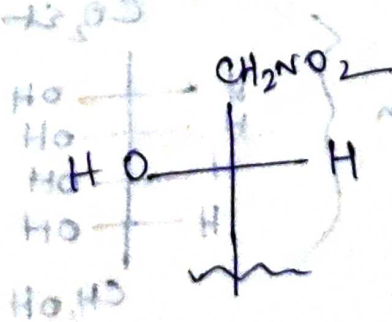
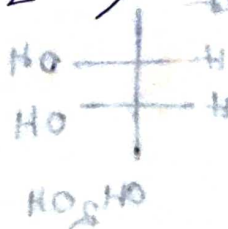
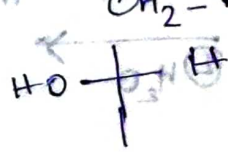
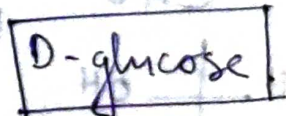
8% $\text{D-arabinose} \xrightarrow{?} \text{D-glucose}$



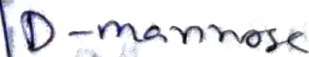
Separation
by column chro.



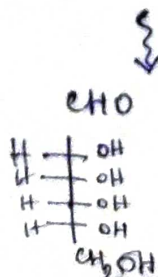
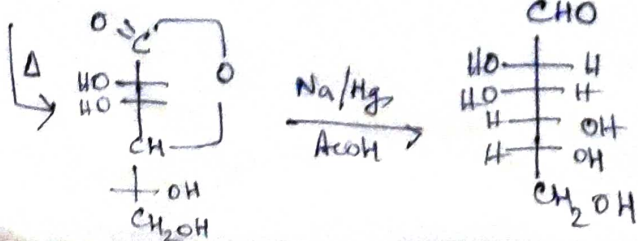
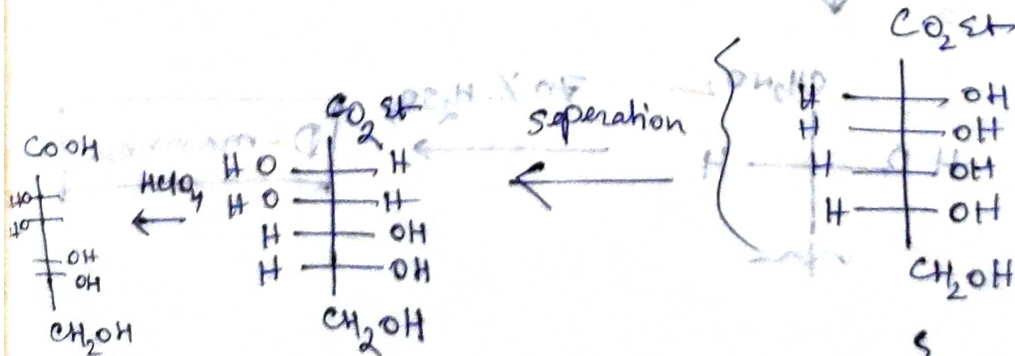
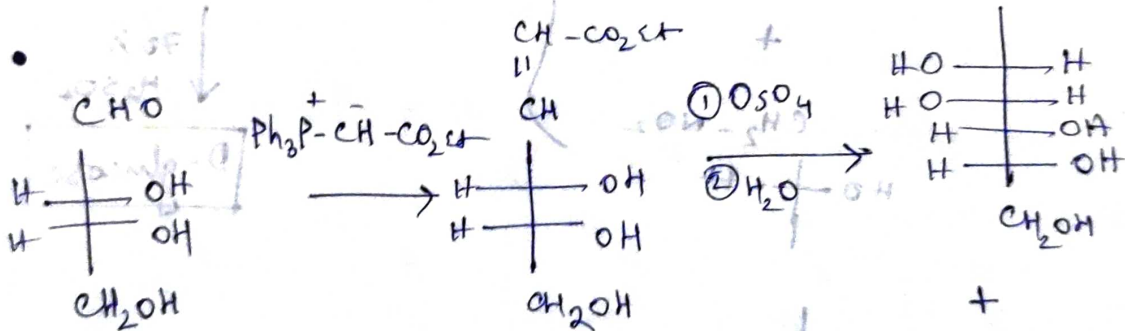
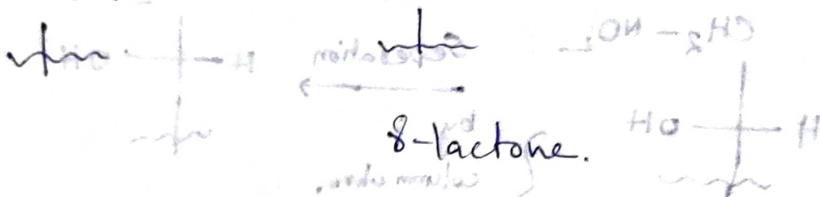
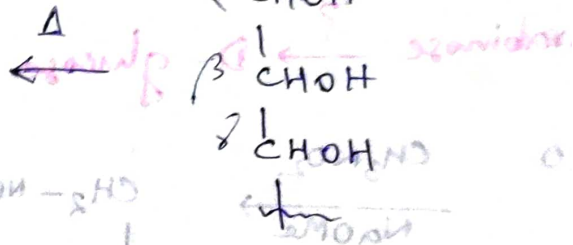
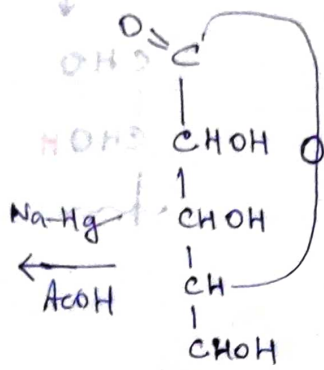
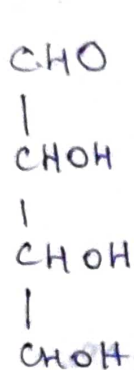
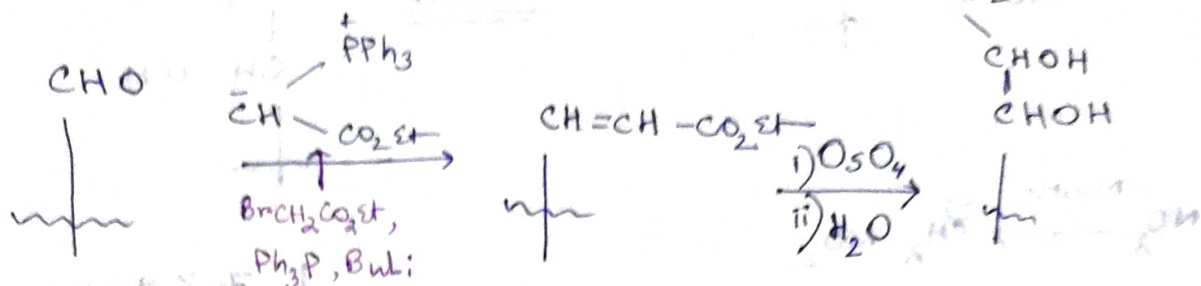
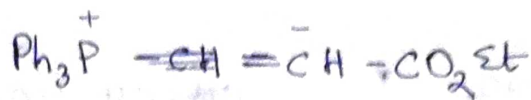
70% H_2SO_4



70% H_2SO_4

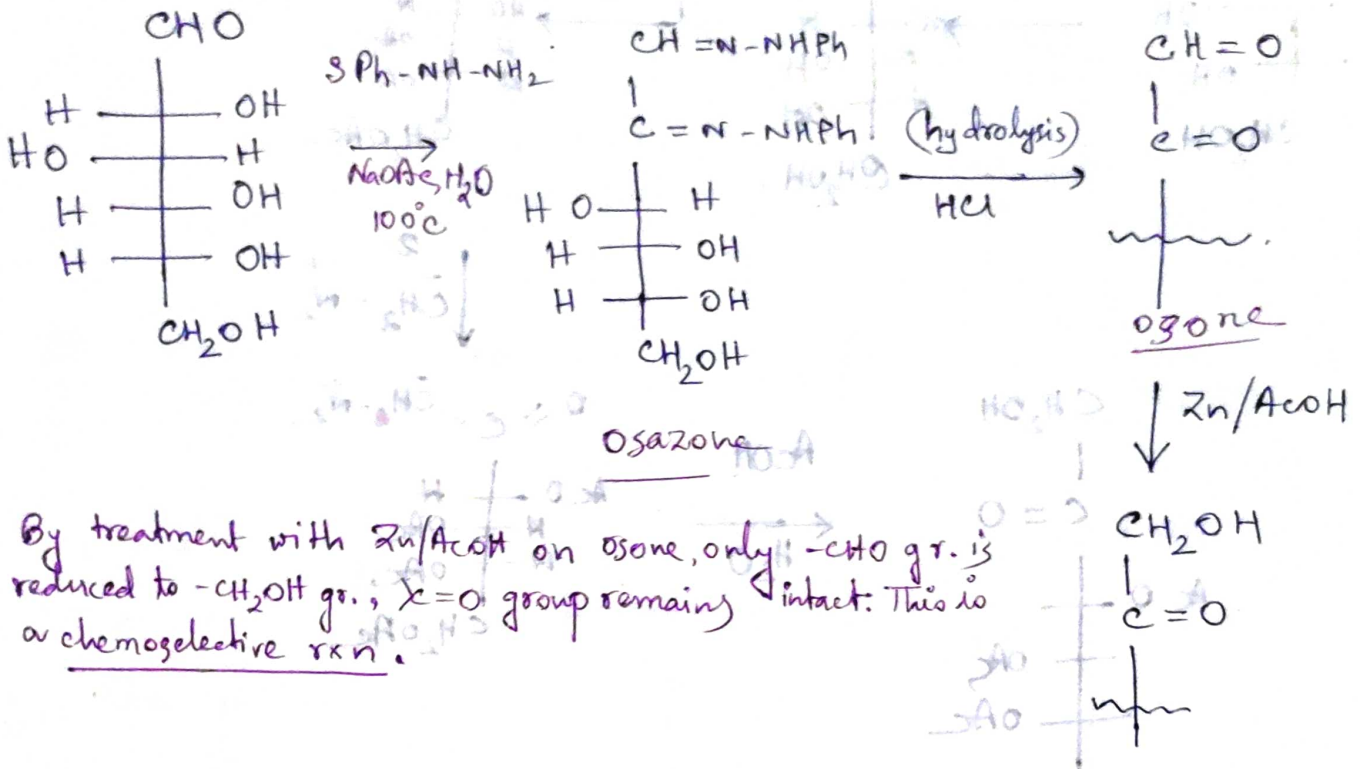


Aldose \rightarrow (Aldose + 2) :



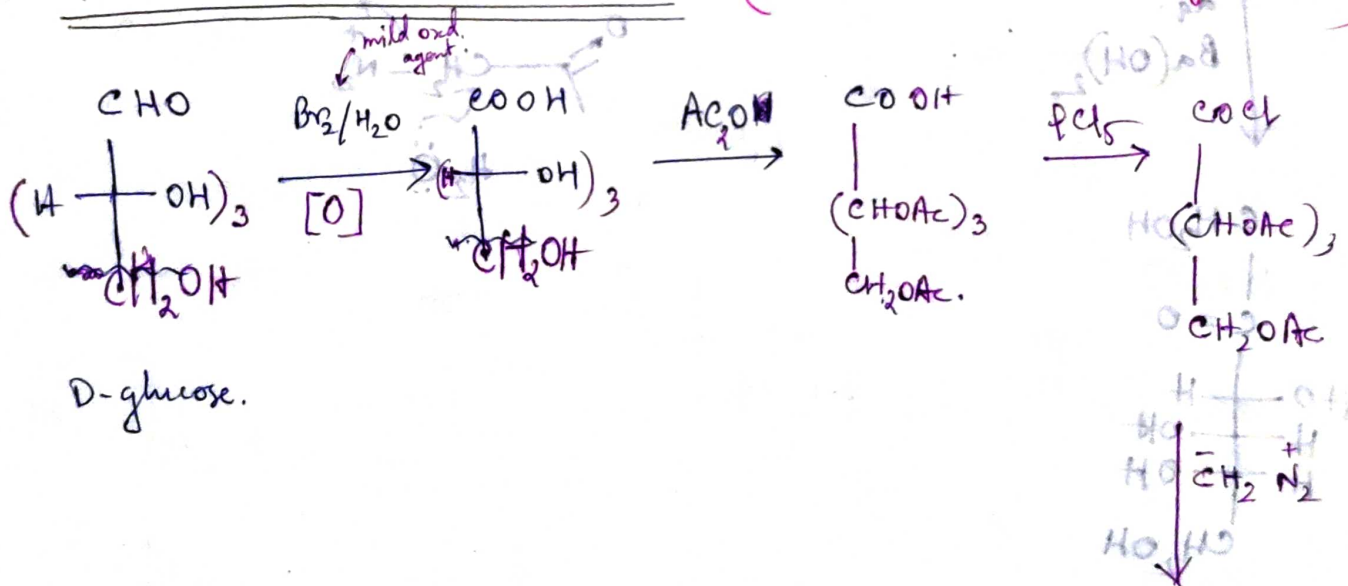
Aldose → ketose.

Q. D-glucose → D-fructose :

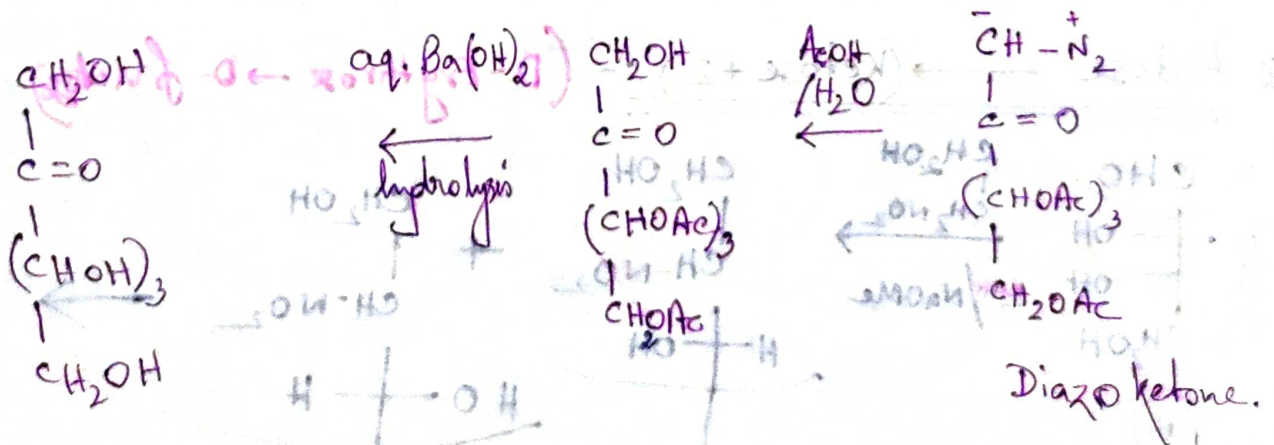


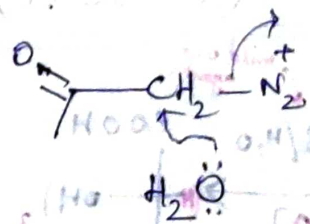
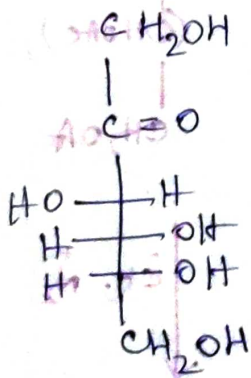
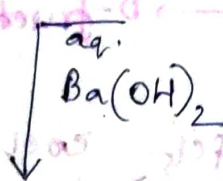
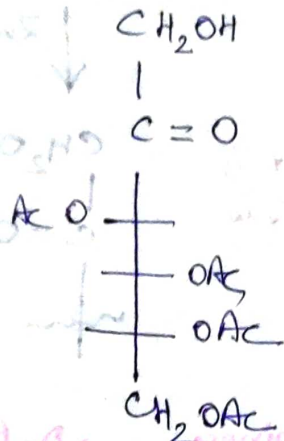
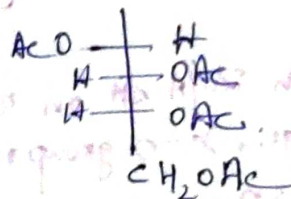
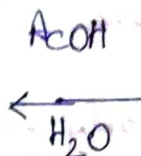
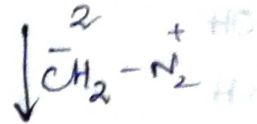
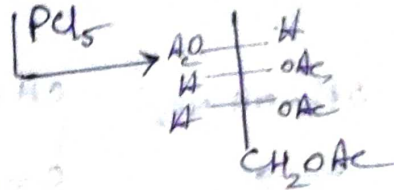
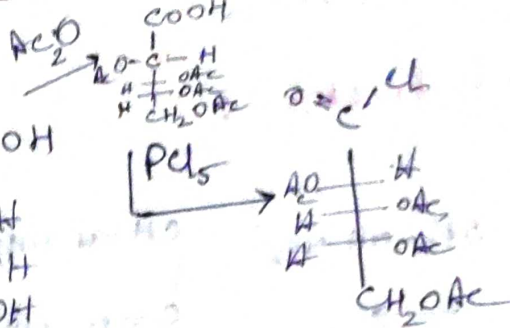
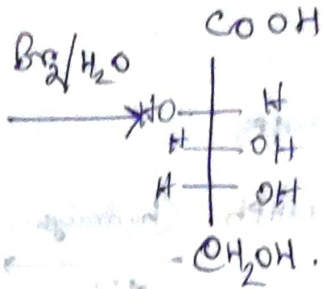
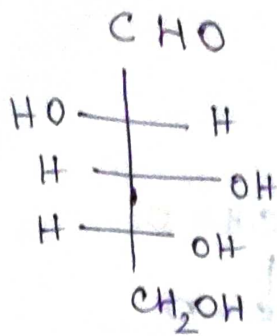
By treatment with Zn/AcOH on osone, only -CHO gr. is reduced to -CH₂OH gr., C=O group remaining intact. This is a chemoselective rxn.

Aldose → (ketose + 1) :- (D-arabinose → D-fructose)

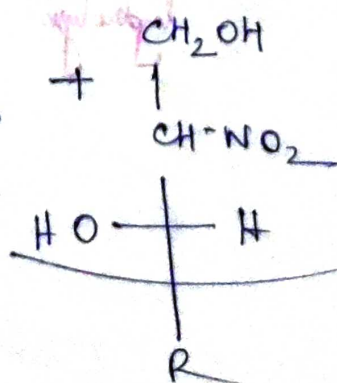
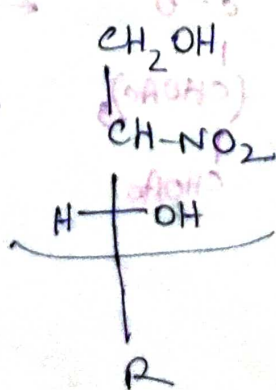
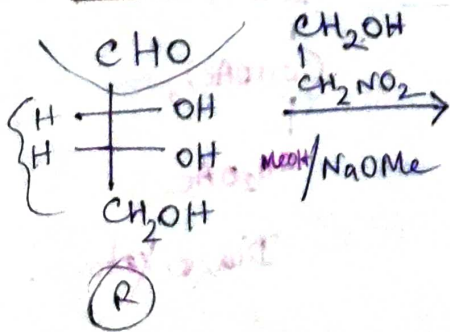


D-glucose.

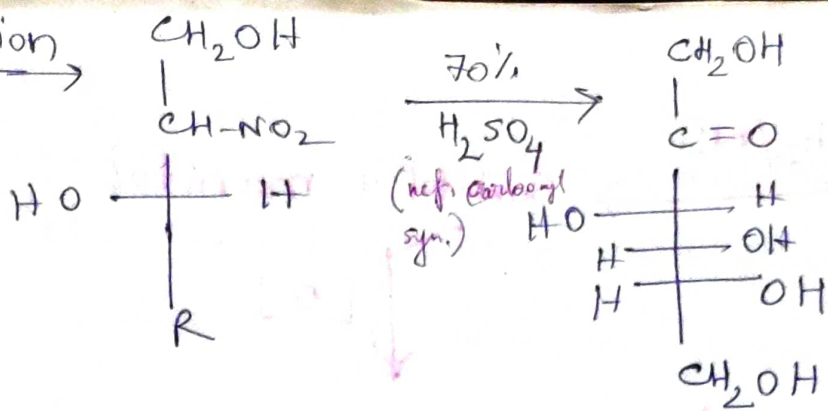




■ Aldose $\xrightarrow{+ \text{H}_2\text{O}}$ (Ketose + 2) :- (D-Erythrose \rightarrow D-fructose)



separation →



Ketose → aldose :- (D-fructose → D-glucose)

