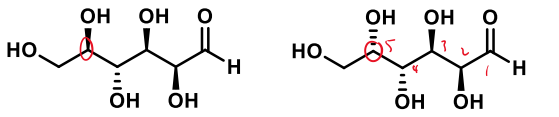
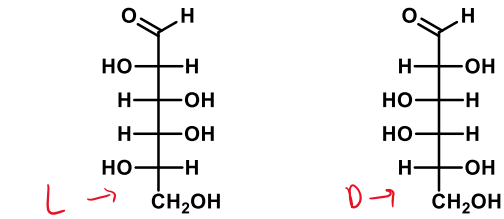
1. For each of the pairs below, define how they are related to each other. Be as specific as possible. (4 pt)

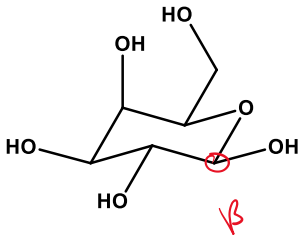


epimers at C5

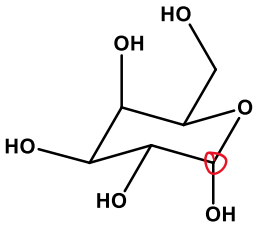


every chiral center changed

enantiomers (D & L carbohydrates)



β

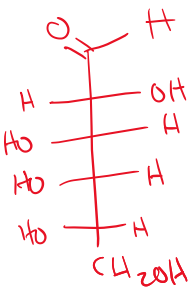


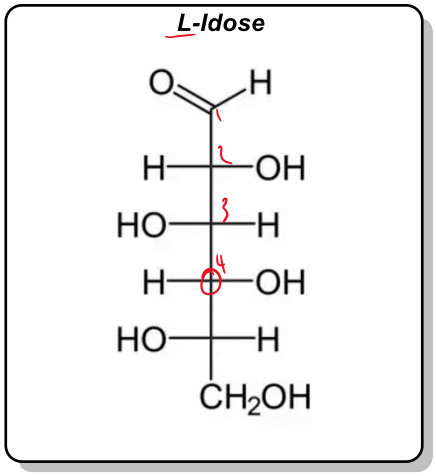
α

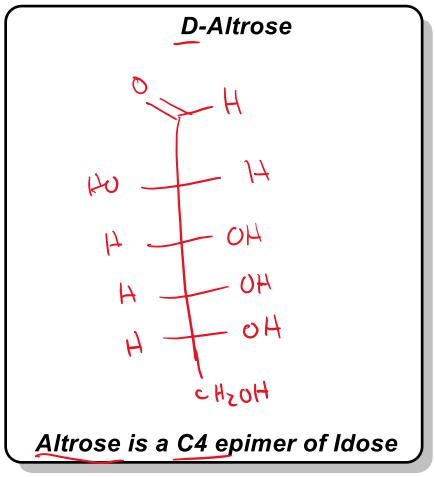
anomers (α & β pyranoses)

2. Given the structure of L-Idose, provide the Fischer projection of D-Altrose, followed by a Haworth projection and chair structure for α-D-altropyranose. (4 pt)

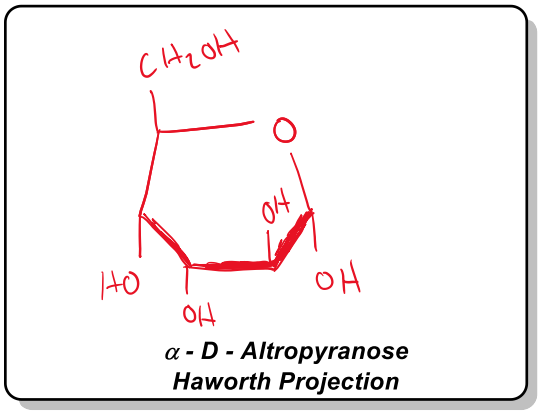
L-Altrose

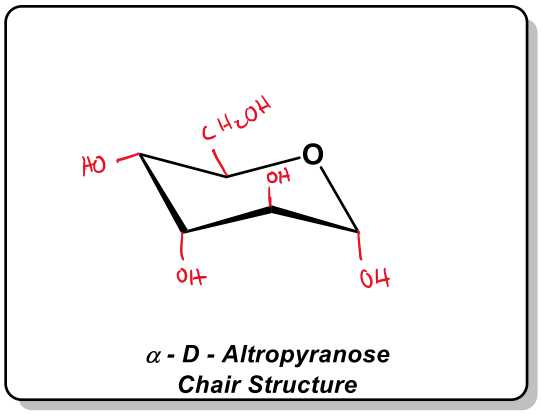




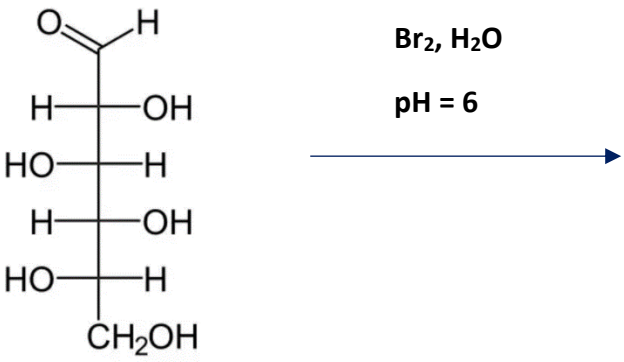


D-CH2OH up





3. Fill in the missing product below.



Br_2, H_2O

pH = 6