## Home Work - Extra Credit 10 points

1) (7-points) Assign $R$ and $S$ to all the chiral centers (4-pts) in the structure below and convert it to the zigzag 3D form (3-points). (Hint; its an epimer of D-glucose)


Ficher projection


Zigzag 3D structure
2) (3-points) Benzoic acid, $\mathrm{C}_{6} \mathrm{H}_{5} \mathrm{COOH}$ has a pka of 4.19. Write an equilibrium reaction equation (1-pt) and calculate the Ka of the reation (2-pts).

