

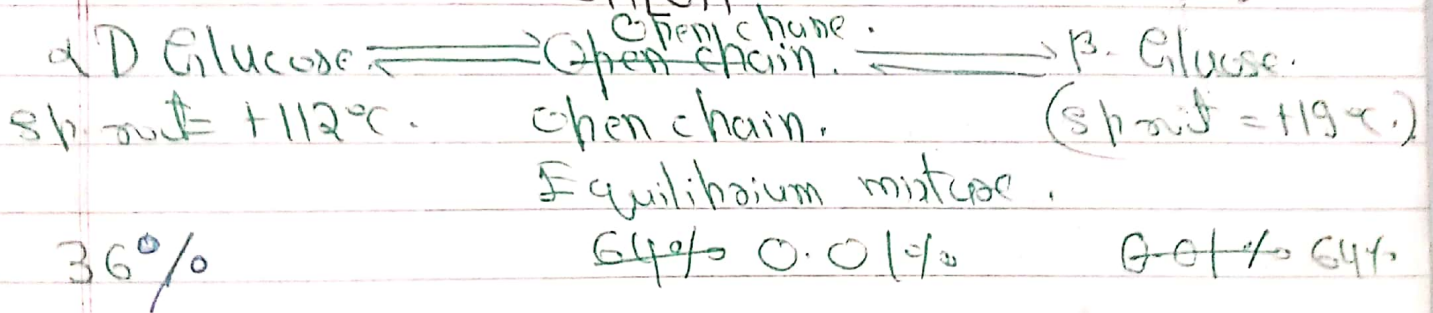
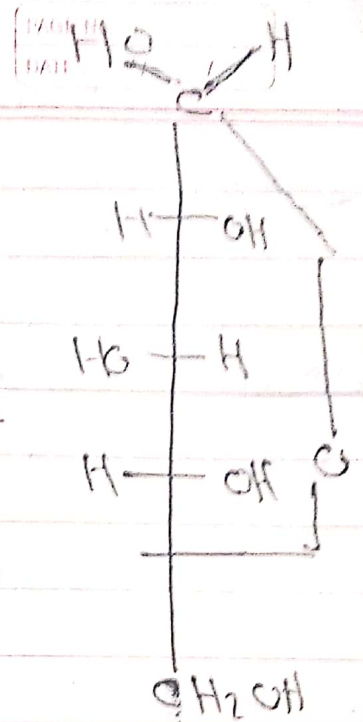
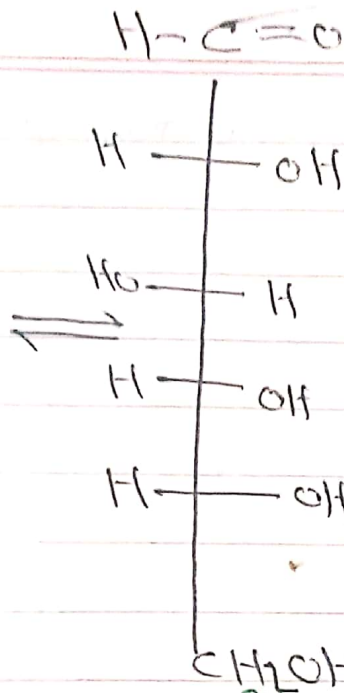
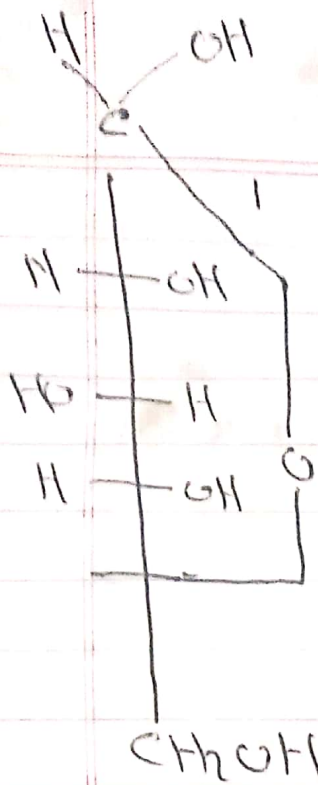
Imp. Mutarotation-

When ordinary glucose solution is made and its specific rotation is determined we found the value ~~+122°~~ +112°. The optical rotation of this compound decreases gradually and finally becomes constant at +53°. The change in specific rotation of a monosaccharide solution is called mutarotation.

Explanation- Ordinary glucose solution is a mixture of two cyclic forms.

1. α -D Glucose having specific rotation +112°.
2. β -D Glucose having specific rotation +19°.

The specific rotation of both forms changes gradually till a constant value of +53° is reached. Both forms change into one another through open chain structure. The aqueous solution consist concentration of both forms at equilibrium to each other.



Sp. rotation of mixture = +52.48°.

In cyclic structure one more asymmetric carbon is generated at C-1. Hence 2 two optical isomers are possible.

$$= \frac{36 \times 112 + 64 \times 19}{100}$$

$$= 52.48$$

$$\begin{array}{r}
 112 \\
 + 360 \\
 \hline
 672 \\
 336 \times \\
 \hline
 1032 \\
 1148 \quad 64 \\
 \hline
 52.48 \quad 19(3) \\
 576 \\
 64 \times 54 \\
 \hline
 1163
 \end{array}$$