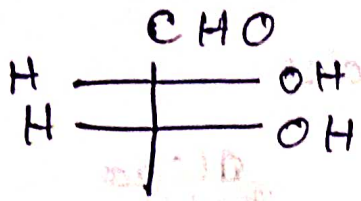
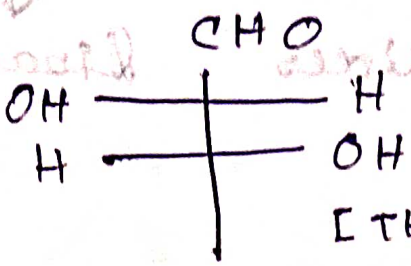
(D)- Glyceraldehyde



[ERYTHROSE]

Tetrose

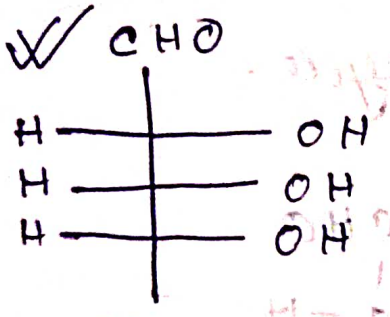
optically active.



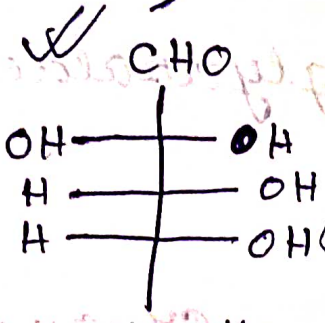
[THREOSE].

Tetrose.

pentose

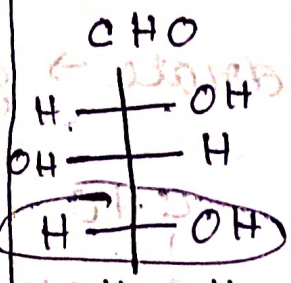


[RIBOSE]

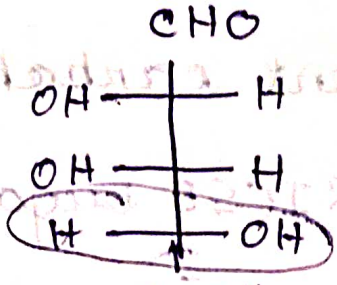


[ARABINOSE]

add from top.

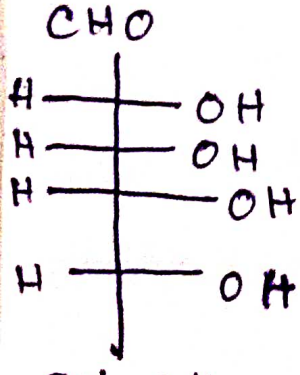


[XYLOSE]

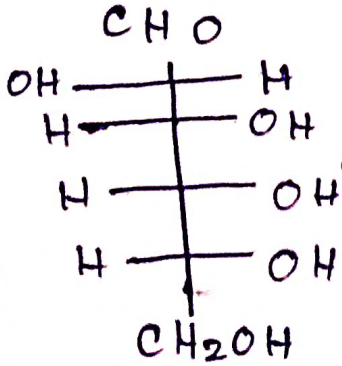


[LYXOSE]

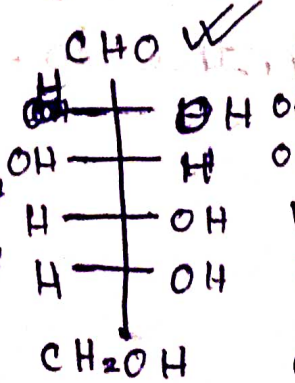
all of these are D- isomers because the mother was a D- glyceraldehyde.



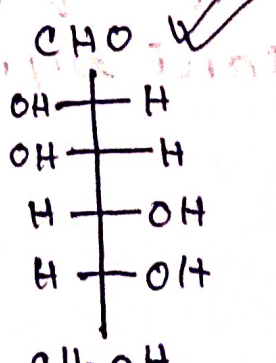
[ALLOSE]



[ALTROSE]

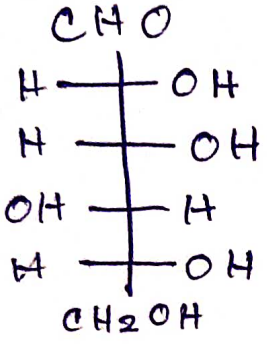


[GLUCOSE]

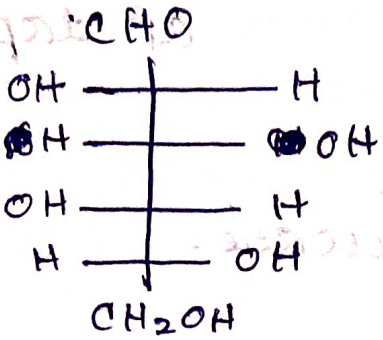


[MANNOSE]

XYLOSE

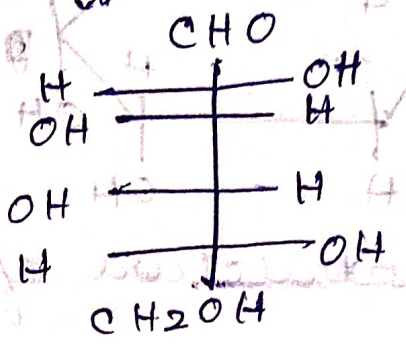


[GULOSE]

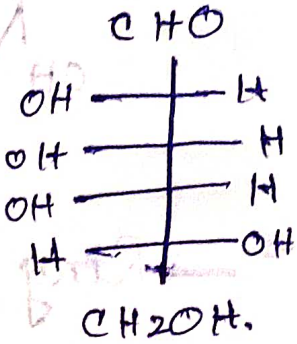


[IDOSE]

LYXOSE



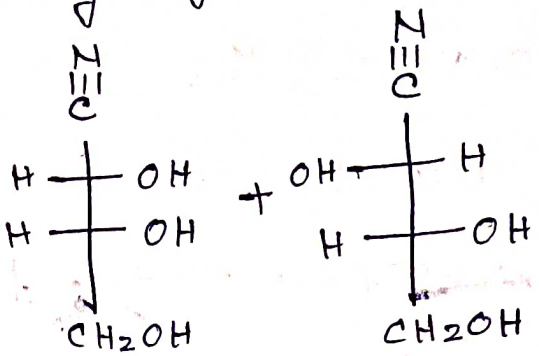
[GALACTOSE]



[GALOSE].

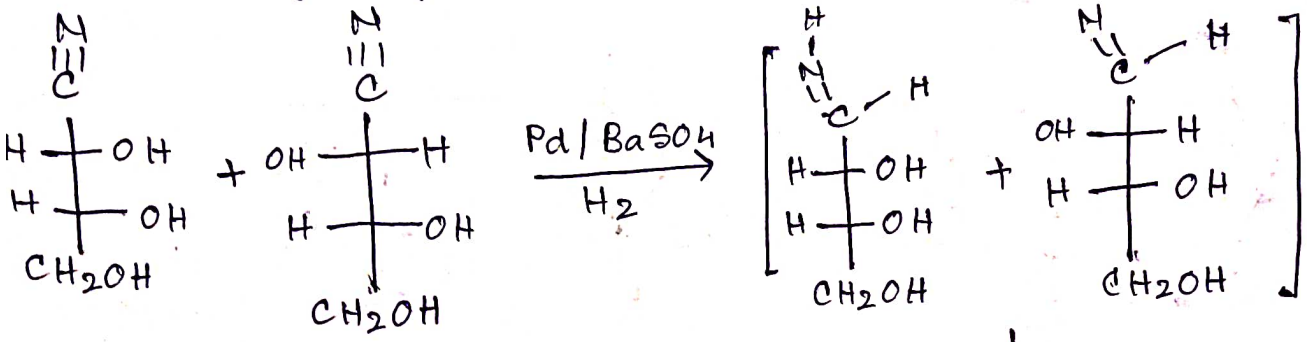
2) The Kiliani-Fischer synthesis involves the following steps:

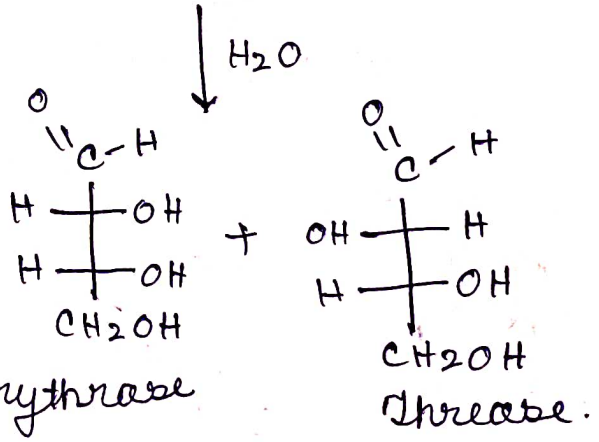
Step 1: Nucleophilic attack by cyanide ion.

D-glyceraldehyde $\xrightarrow[H_2O]{K^+CN^-}$ 

mixture of compounds.

Step 2: Hydrogenation.





Erythrose

Threose.

Q. Starting from ~~some other~~ the mother carbohydrate show how 8 different type of hexoses can be formed by Kiliani synthesis.

Q. How does Kiliani synthesis take place?

Q. Draw the structure of ~~α-glucose~~

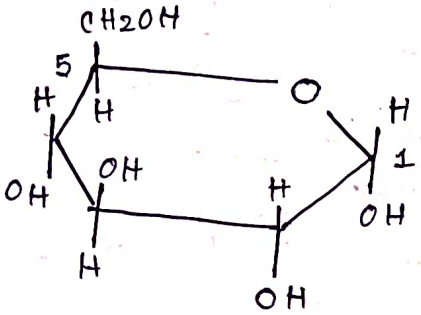
α-glucopyranose, β-glucopyranose,

α-galactopyranose, β-galactopyranose,

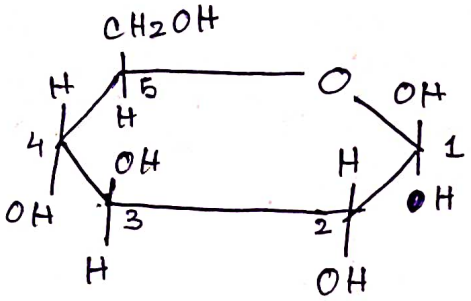
α-mannose, β-altrose.

— X —

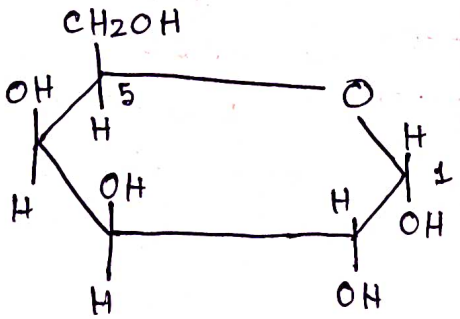
3)



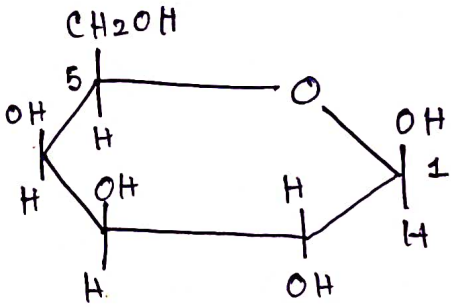
α-glucopyranose



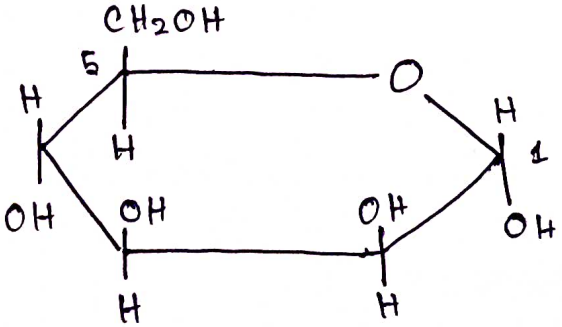
β-glucopyranose.



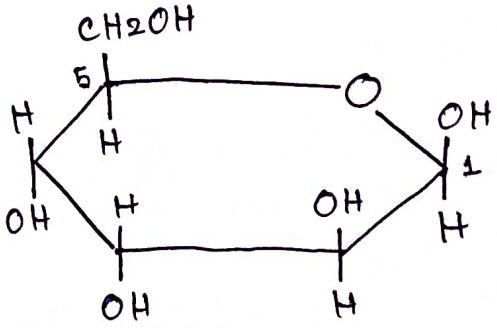
α-galactopyranose



β-galactopyranose.

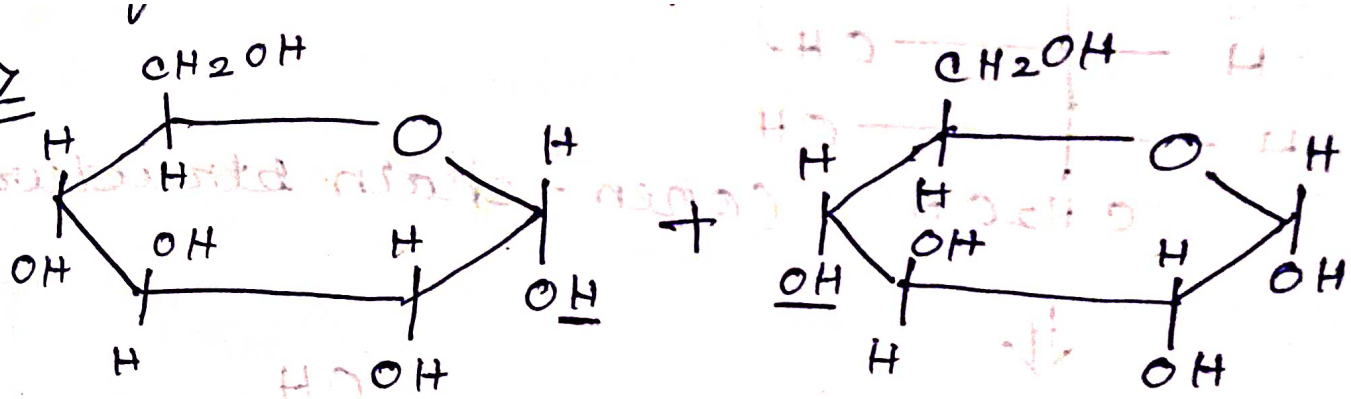


α-mannose

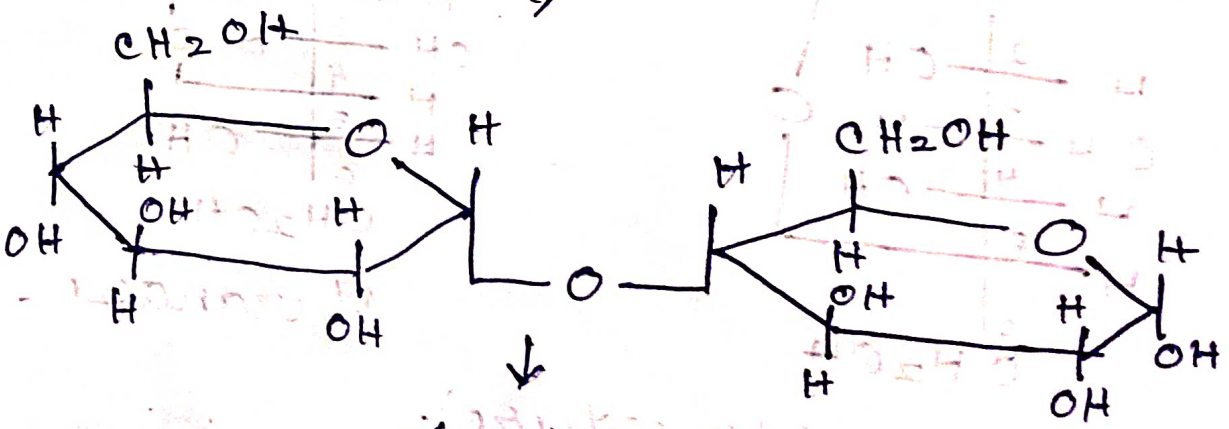


β-altrose.

2)



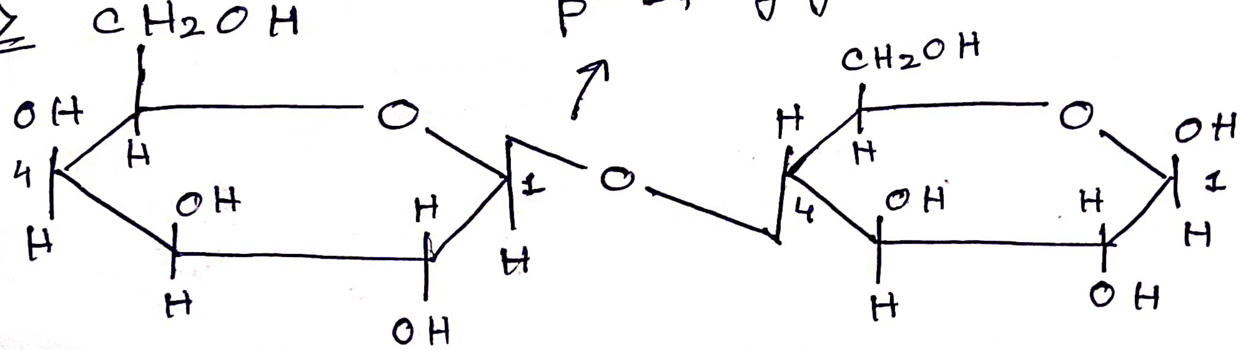
α - glucose



α - 1, 4 glycosidic bond.

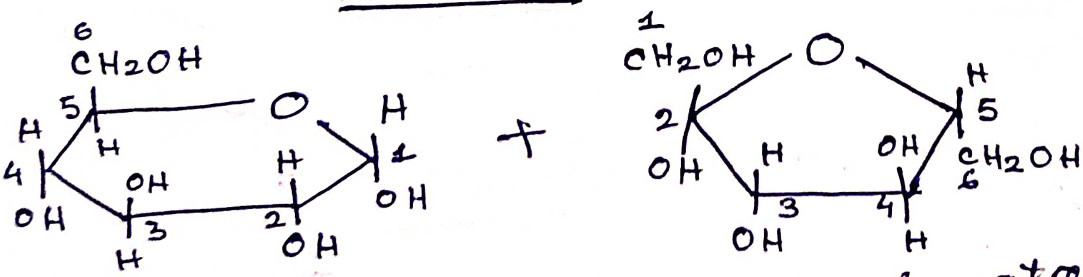
Maltose

2) β - 1, 4 glycasidic bond.



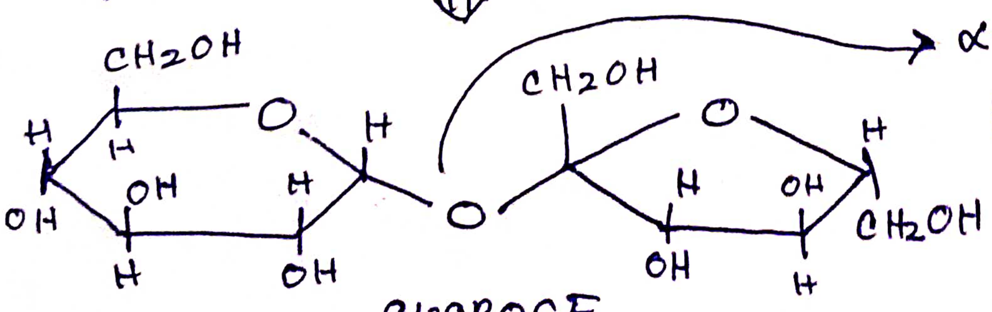
β - D - Galactase β - D - Glucase.

Lactase



α - D - glucase β - D - fructase

⇓



α - 1, β - 2 glycasidic linkage.

SUCROSE