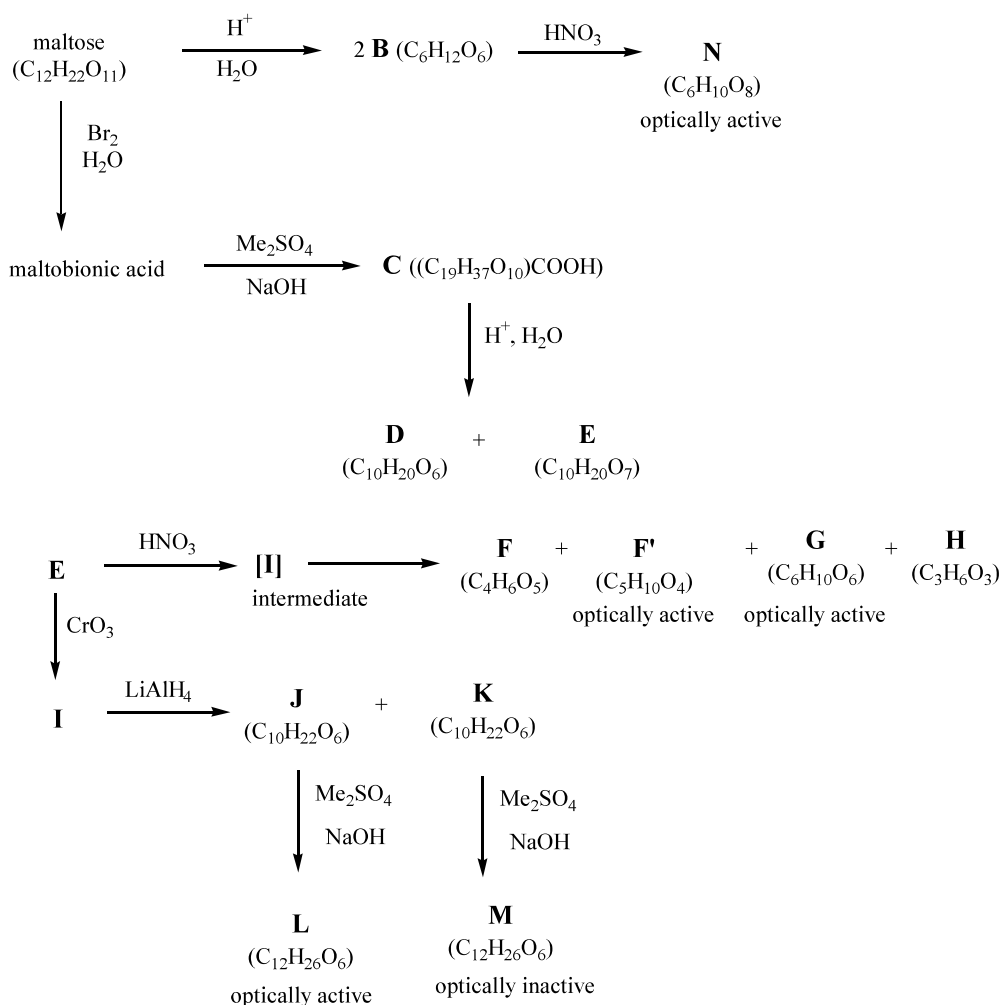


Problem 19: Stereochemistry (Organic synthesis – 1)

The fermentation of starch with malt produces ethyl alcohol. During this process, the hydrolysis of starch is catalyzed by the enzyme diastase present in malt to produce maltose, a disaccharide.

Maltose ($C_{12}H_{22}O_{11}$) reduces Tollens' and Fehling's reagents and it is oxidized by bromine in water to maltobionic acid ($(C_{11}H_{21}O_{10})COOH$), a mono carboxylic acid. In order to deduce its structure, maltose was subjected to series of reactions:



19-1. Draw structures **B**, **D-N** in a Fisher projection.

19-2. Draw structures for maltose, maltobionic acid and **C** in a Haworth projection.