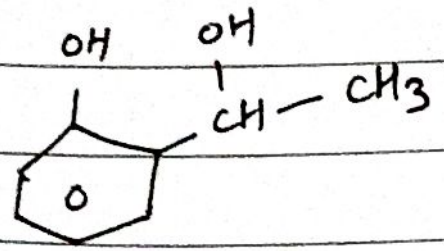
* An organic compound $C_8H_{10}O_2$ rotates plane polarised light and produces pink color with neutral $FeCl_3$ solution. What is the total no. of possible isomers for compound?

(Jee Adv- 2020)

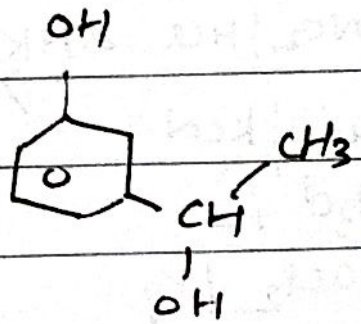
Sol^n. Since it produces pink color with neutral $FeCl_3$ solution, it must be a derivative of phenol ie, it must contain a -OH gp. attached to benzene ring. Now remaining atoms is 2C, 1O and H.

Also it rotates plane polarised light ⇒ optically active. Since Benzene itself is optically inactive, the group of remaining 2 C atom should make the whole compound chiral. so, the remaining group should be $-\underset{\underset{OH}{|}}{CH}-CH_3$.

Possible isomers are:



(±)



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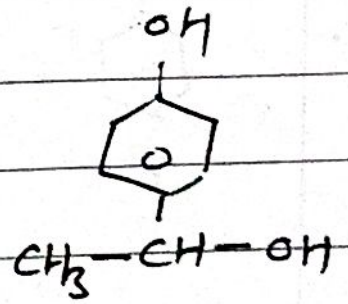

(±)

∴ 6 isomers