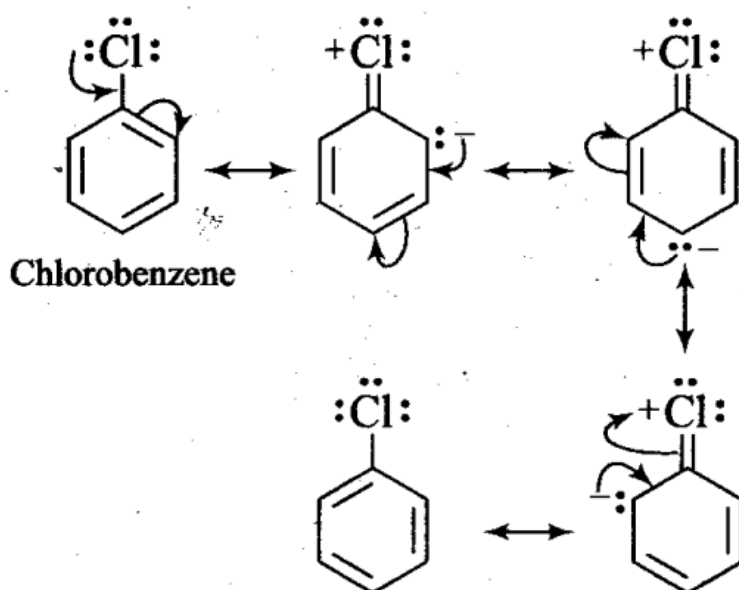


Q28. Despite their -I effect, halogens are o- and p-direction in haloarenes.

Explain.

Sol: In case of aryl halides, halogens are little deactivating because of their strong -I effect. Therefore, overall electron density on the benzene ring decreases. In other words, halogens are deactivating due to -I effect. However, because of the +R-effect, i.e., participation of lone pairs of electrons on the halogen atom with the π -electrons of the benzene ring, the electron density increases more at o- and p-positions than at m-positions.



As a result, halogens are o-, p-directing. The combined result of +R-effect and -I-effect of halogens is that halogens are deactivating but o, p-directing