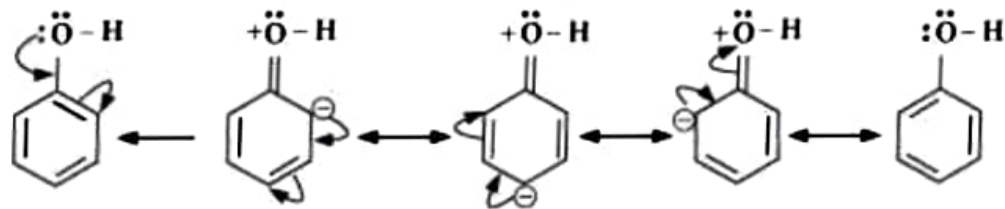


Explain how does the  $-OH$  group attached to a carbon of benzene ring activate it towards electrophilic substitution?

Answer

The  $-OH$  group is an electron-donating group. Thus, it increases the electron density in the benzene ring as shown in the given resonance structure of phenol.



As a result, the benzene ring is activated towards electrophilic substitution.