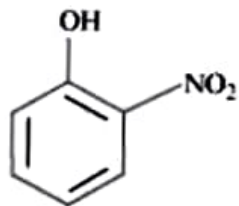
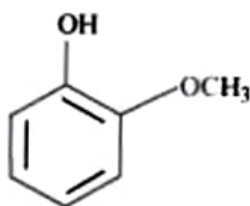


Explain why is *ortho* nitrophenol more acidic than *ortho* methoxyphenol?

Answer



*o* - Nitrophenol



*o* - Methoxyphenol

The nitro-group is an electron-withdrawing group. The presence of this group in the *ortho* position decreases the electron density in the O-H bond. As a result, it is easier to lose a proton. Also, the *o*-nitrophenoxide ion formed after the loss of protons is stabilized by resonance. Hence, *ortho* nitrophenol is a stronger acid.

On the other hand, methoxy group is an electron-releasing group. Thus, it increases the electron density in the O-H bond and hence, the proton cannot be given out easily.

For this reason, *ortho*-nitrophenol is more acidic than *ortho*-methoxyphenol.